Inauguraldissertation

zur Erlangung des akademischen Grades

einer Doktorin der Sozialwissenschaften

der Universität Mannheim

Uncertainty Management by Means of Trust

vorgelegt von

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Mannheim, November 2010

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Tag der Disputation:	18. Februar 2011

ACKNOWLEDGEMENTS

Many people have contributed to the successful completion of this dissertation project and I am grateful for their important and highly appreciated help.

First of all I wish to thank my advisor Dagmar Stahlberg for her most valuable academic guidance, her competent advice in developing and realizing ideas, and for critically questioning the apparently obvious. I am deeply indebted for the unconditional support and encouragement I received throughout this dissertation. Moreover, I could not have wished for a better social environment.

I would like to thank Kees van den Bos for many inspiring discussions, constructive feedback, and the impulse to rethink matters and consider them from a new perspective. Working with him was a very valuable experience and this dissertation has greatly benefited from his input and support.

Special thanks to Patrick Müller, without whom this research project would not have started. Numerous fruitful discussions, his continuous motivation, and his enthusiasm have significantly contributed to this dissertation.

I wish to thank my colleagues for many helpful comments on my research and the good atmosphere at the department. Special thanks to Christiane Schöl and Sabine Scholl for their constant academic and personal support and for proofreading this thesis.

Financial support for this dissertation project was partly provided by the Graduate School of Economic and Social Sciences (GESS) at the University of Mannheim for which I am very grateful. I would like to thank Jürgen Wiedmann for enabling the external data collection. Many thanks to all research assistants who helped conduct several of the studies presented here.

Finally, I would like to express my deepest gratitude to my family and friends for their invaluable support. Thank you so much!

TABLE OF CONTENTS

1 INTRODUCTION AND OVERVIEW

Life is uncertain. This becomes apparent in the financial crisis of 2007 continuing to the present, environmental disasters such as the oil spill in the Gulf of Mexico in 2010, or terroristic attacks like 9/11. All of these events were, and still are, highly unsettling to a large number of people and cause feelings of threat, anxiety, and uncertainty around the globe.

Dramatic life events and changes have always occurred, but in modern life change happens at an increasingly fast pace and with a very high density. Nowadays, most life domains involve some degree of change and instability. Interpersonal and personal life is characterized by changing family structures, increasing divorce rates, frequent moving, and repeatedly changing social networks. In their work lives, people encounter the effects of globalization, face job insecurity, and often switch careers. The digital revolution has brought about drastic changes and technological innovations that continuously pose novel challenges to individuals. The demographic change places new demands on present and future generations and renders social structures and life in the social world uncertain. Traditional norms and value systems are constantly modified, and one's role and position in the family, the job, or society is no longer clearly and permanently defined. In sum, people are confronted with a multitude of rapid changes to which they need to adapt, fuelling self-doubt and uncertainty (Carroll, Arkin, & Oleson, 2010, p. 308).

These feelings of uncertainty stand in sharp contrast to one of the most fundamental human motives: the need for safety and certainty (Kagan, 1972; Maslow, 1943). A predictable, structured, and safe world is preferred over an unorganized, unreliable, and uncontrollable one. Uncertainty is usually experienced as highly aversive and threatening (Hogg, 2007; Kagan, 1972), and managing uncertainty is therefore a

major concern for most of us (e.g., Berger & Calabrese, 1975; Hogg, 2000; Kagan, 1972; Sorrentino, Holmes, Hanna, & Sharp, 1995; Van den Bos & Lind, 2002). This particularly pertains to personal uncertainty, that is, uncertainty regarding the self and one's social relationships (e.g., Van den Bos & Lind, 2010).

How do individuals accomplish the goal of coping with personal uncertainty? In this dissertation, I propose that one important way to do so is via *relational information*, that is, via knowledge that informs us about the social relationships we have with other persons, groups, or organizations, and that helps us evaluate these relationships. I suggest that a particularly valuable and informative type of relational information that helps individuals deal with uncertainty is whether one can *trust* another party. Knowledge about a party's trustworthiness provides information about the quality of social relationships, increases predictability, and conveys feelings of security, thereby providing an effective means of coping with uncertainty (e.g., Dirks & Ferrin, 2001; Lind, 2001; Sorrentino et al., 1995).

Based on the assumption that trust-related information helps manage personal uncertainty, I further propose that trust is especially relevant under conditions of personal uncertainty and that individuals are therefore particularly responsive to trust-related issues when they feel uncertain. In other words, I put forward the idea that uncertainty increases individuals' sensitivity to trust-related information.

One may argue that personal uncertainty does not sensitize individuals to relational information in particular, but rather amplifies responsiveness to any given information (e.g., Tiedens & Linton, 2001). However, I assume that when uncertainty pertains to the self or one's relationships with other people, uncertain individuals are specifically more sensitive to relational information, but not to relationship-irrelevant information.

Previous research has demonstrated that individuals who feel uncertain are more responsive to fairness-related information (Van den Bos & Lind, 2002). Importantly, fairness judgments are often less comprehensive than trust judgments. Therefore, I propose that when both fairness- and trust-related information are available, individuals likely use trust information with a higher priority than fairness information to manage their uncertainty, and are thus more sensitive to trust information than to fairness information when feeling uncertain.

Organizational contexts constitute an important part of our lives and feature particularly powerful and long-standing sources of uncertainty (Hogg, 2007). The studies reported here were therefore conducted in an organizational context, mainly in the field of personnel selection.

In sum, the current dissertation project empirically investigates whether trust-related information can be used to cope with personal uncertainty, whether personal uncertainty amplifies individuals' sensitivity to trust, and which types of information are most relevant for coping with personal uncertainty. In doing so, this dissertation enhances our understanding of uncertainty management processes.

2 THEORETICAL PART

The purpose of this chapter is to outline the theoretical background of this dissertation. First, the concept of uncertainty is introduced (Chapter 2.1). Ways how individuals deal with uncertainty are then addressed, with particular focus on the role of relationship-relevant information in uncertainty management processes (Chapter 2.2). Next, I introduce the concept of trust as a central type of relational information (Chapter 2.3) and discuss how trust-related information can serve as a means of managing personal uncertainty (Chapter 2.4). Based on this notion, I propose that personal uncertainty increases sensitivity to trust-related information (Chapter 2.5). Subsequently, the interplay of uncertainty, trust, and procedural fairness is addressed (Chapter 2.6). Finally, the hypotheses of this dissertation are summarized in Chapter 2.7.

2.1 Uncertainty

The concept of uncertainty has spurred the interest of researchers from various disciplines, including philosophy, statistics, economics, sociology, physics, and psychology, and it is not surprising that many different conceptualizations of uncertainty exist. Within the field of social psychology, several kinds of uncertainty have been identified, such as informational, relational, and self-uncertainty. This chapter gives an overview of the uncertainty constructs that are relevant for the present investigation.

The current dissertation focuses on *personal uncertainty* (e.g., Van den Bos & Lind, 2010), comprising of both relational uncertainty (Chapter 2.1.1) and self-uncertainty (Chapter 2.1.2). Although informational uncertainty (Chapter 2.1.4) is not the focus of the current dissertation, it will be discussed here since it constitutes an important type of uncertainty in the psychological literature and may sometimes overlap with aspects of personal uncertainty.

2.1.1 Relational uncertainty

One type of uncertainty relates to uncertainty about the social relationships we have with others. This has been labelled *relational uncertainty* (e.g., Knobloch & Solomon, 1999, 2002). Individuals may feel uncertainty about a variety of social relationships, ranging from intimate or interpersonal relationships to relationships with groups or organizations.

Knobloch and Solomon (1999) address uncertainty in the context of interpersonal relationships and define relational uncertainty as the extent to which individuals are unsure about their perceptions of a relationship. According to the authors, relational uncertainty arises from three sources: the self, the partner, and the relationship. Uncertainty about the self comprises individuals' ambiguity about their own relationship involvement; partner uncertainty involves individual's doubts about their partner's relationship involvement; and relationship uncertainty refers to questions individuals have about the state of the relationship itself. In a similar vein, Sorrentio and colleagues (1995) argue that uncertainty in interpersonal relationships may arise from doubts and ambivalence about the partner. It is often not clear whether the partner can be counted on, meets one's needs, and reciprocates positive feelings, particularly at the outset of relationships. This causes feelings of uncertainty and insecurity.

Addressing uncertainty in the context of interpersonal communication, Berger and Calabrese (1975) propose that when individuals enter a relationship with a stranger they do not know how the other person will behave and what response to this behavior is appropriate. Individuals must predict the other person's actions from the possible behaviors available and have to choose an appropriate reaction from the response alternatives. This involves uncertainty in the sense that proactive predictions have to be made. Furthermore, once an action has been taken individuals need to explain both the

other person's as well as their own behavior. They have to choose from a number of plausible attributions why a person behaved in a particular manner or what the person meant by what s/he said or did. This causes uncertainty in the sense that retroactive explanations have to be provided. In sum, the authors assume that uncertainty is a cognitive entity consisting of both prediction and explanation elements in interpersonal interactions.

According to Yamagishi, Cook, and Watabe (1998), we face uncertainty whenever we interact with other people. Interaction can on the one hand enhance our material or psychological welfare, but on the other hand makes us vulnerable to potential costs of the interaction, such as exploitation, fostering feelings of social uncertainty. The authors define uncertainty as a person's inability to predict how an interaction partner will behave, given that the partner may harm or impose costs on the actor.

Lind (2001) interprets uncertainty in a similar way. He argues that individuals continuously face a *fundamental social dilemma* when they have to decide whether they should cooperate with others or not. On the one hand, cooperation can lead to favorable outcomes and assure self-identity in the long term. On the other hand, behaving cooperatively can increase the risk of being exploited or excluded from substantial social relationships. This dilemma is associated with feelings of insecurity and uncertainty since the consequences of the decision are often unknown.

Relational uncertainty as it is understood here involves uncertainty about relationships with others in general. Thus, relational uncertainty here means that individuals feel uncertain about a relationship with another party, be it a single person, a group, or an organization, or an individual representing one of these.

2.1.2 Self-uncertainty

Another type of uncertainty relates to personal attributes, such as uncertainty about one's own cognitions, emotions, goals, or abilities. This has been labelled *self-uncertainty* (e.g., De Cremer & Sedikides, 2005; Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007).

Based on Festinger's (1957) theory of cognitive dissonance, Kagan (1972) interprets uncertainty in terms of a cognitive conflict or incompatibility between cognitions, between cognitions and experiences, or between cognitions and behavior. Uncertainty occurs when an idea contradicts with what a person has stored in memory, when a situation is inconsistent with an established schema, or when one's behavior is incompatible with one's convictions.[1] Such cognitive inconsistency or dissonance is also the core of McGregor and colleagues' (McGregor, Zanna, Holmes, & Spencer, 2001) conception of uncertainty. Based on Baumeister, Shapiro, and Tice (1985), McGregor and colleagues (2001) define personal uncertainty as an "acute kind of identity crisis that can arise from awareness of having inconsistent or unclear self-relevant cognitions" (p. 473). This identity crisis can be due to a lack of personal goals and values (identity deficit) or due to ambiguity what to do and what decision is best in a specific situation (identity conflict; Baumeister et al., 1985).

De Cremer and Sedikides (2005; see also Sedikides, De Cremer, Hart, & Brebels, 2010) conceptualize self-uncertainty as individuals' doubts and insecurities regarding their self-knowledge, identity, and inclusiveness. Feeling uncertain is unpleasant and is associated with "the perception that life lacks purpose, direction, and meaning" (Sedikides et al., 2010, p. 143). The authors operationalize self-uncertainty in

[1] Kagan (1972) recognizes that uncertainty can also result from a person's inability to predict and prepare for the future (see the discussion of informational uncertainty, Chapter 2.1.4).

terms of self-esteem instability, self-doubt, and self-concept unclarity. *Self-esteem instability* captures the extent to which people have fluctuating feelings of self-worth and experience shifts in self-esteem level (Dykman, 1998; Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000). *Self-doubt* refers to individuals' doubts and concerns about their competence and abilities (Hermann, Leonardelli, & Arkin, 2002; Oleson & Steckler, 2010). *Self-concept unclarity* relates to the extent to which a person's self-concept (such as perceived personal attributes) is internally consistent, temporally stable, and clearly and confidentially defined (Campbell, 1990; Campbell et al., 1996). Persons high in self-esteem instability, self-doubt, or self-concept unclarity are assumed to experience high levels of uncertainty about themselves.

According to Hogg (e.g., 2000, 2007), self-uncertainty involves being uncertain about one's feelings, cognitions, and behaviors about the self. The self includes both the personal self, involving idiosyncratic and interpersonal aspects of the self, and the social self, reflecting attributes shared with the groups to which one belongs or wants to belong (Hogg, 2009). People want to know who they are, what they should think, how they should behave, how they relate to others, what others think or feel, and how others will behave. In this sense, Hogg's conceptualization of self-uncertainty includes what has been labelled relational uncertainty here (Chapter 2.1.1) and could therefore also be classified as personal uncertainty (see Chapter 2.1.3). Self-uncertainty is associated with a loss of control over one's life and is therefore highly aversive. Although Hogg acknowledges individual difference perspectives of uncertainty (e.g., uncertainty orientation, see Sorrentino & Roney, 1986), he notes that "uncertain times produce uncertain people" (Hogg, 2000, p. 229) and that self-uncertainty ultimately depends on social contextual factors.

2.1.3 Personal uncertainty

In this dissertation I will use the term *personal uncertainty* to refer to both relational and self-related aspects of uncertainty. This is in line with Van den Bos & Lind (e.g., 2010), who conceive of personal uncertainty as an individual's doubts or instability regarding views about the self or about the social world. On the one hand, this includes being uncertain about oneself, one's perceptions, feelings, preferences, and attitudes, which closely corresponds to the concept of self-uncertainty (Chapter 2.1.2). On the other hand, this involves feeling uncertain about the social world and the relationships we have with others, which corresponds to the concept of relational uncertainty (Chapter 2.1.1). According to the authors, experiencing personal uncertainty is associated with hot-cognitive psychological processes and triggers both cognitive and affective reactions. Personal uncertainty can derive from stable individual differences, like emotional uncertainty (Greco & Roger, 2001), or characteristics of the situation, such as uncertainty that has been made experimentally salient (Van den Bos, 2001a).[2]

2.1.4 Informational uncertainty

Uncertainty can also derive from insufficient or ambivalent information about the world we live in and about causes and consequences of events. Van den Bos and Lind (2010) labelled this *informational uncertainty*, defining it as a deficiency of information that would be necessary to confidently and reliably form a judgment.

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[2] Hogg (2009) notes that the distinction between personal uncertainty (e.g., Van den Bos & Lind, 2002) and self-uncertainty (e.g., Hogg, 2007) may reside in a different use of language rather than in genuine differences in meaning. Both concepts can refer to uncertainty about the self and uncertainty about one's relationships with others. However, the term self-uncertainty is sometimes also used without reference to relational uncertainty (e.g., De Cremer & Sedikides, 2005). The term personal uncertainty was chosen here to make explicit the self-related components as well as the relational components of this uncertainty concept.

Many studies in the literature on judgment and decision making have focussed on informational uncertainty, conceptualizing it as an individual's inability to predict, evaluate, or affect the future. This inability can result from unknown probabilities of events, their outcomes, or their values (Tversky & Kahneman, 1974). According to Humphreys and Berkley (1985), uncertainty can arise due to incomplete or ambiguous information, inadequate integration of information, unclear likelihoods of events following events or actions, unknown value of possible consequences, unclarity about appropriate decision processes, unknown future preferences and actions, or ambiguity regarding one's ability to influence subsequent events.

According to Tolman and Brunswik (1935), our environment is characterized by ambiguity and equivocality. A given cue can lead to several different inferences about the environment, and several different cues can lead to the same inference. Hence, there is no perfect causality in the world and relations are not certain, but probabilistic. In order to understand the structure of the world, individuals have to come up with hypotheses about the most probable causes and effects of events. They need to decrease uncertainty about the world's structure as much as possible in order to survive.

Building in part on this view, Weary and Edwards (1996) propose in their causal uncertainty model that a fundamental source of uncertainty is a person's failure to understand or detect the causal conditions underlying events in the social world. Not knowing why something has happened results in feelings of uncertainty. This *causal uncertainty* results in more attentive encoding, interpretation, and storage of social information so as to (re)gain knowledge about the structures of the social world (see also Chapter 2.5.3).

Informational uncertainty is not always clearly separable from aspects of personal uncertainty. For example, uncertainty that arises due to a lack of knowledge about the self can be interpreted as either informational uncertainty or self-uncertainty.

Similarly, when individuals feel uncertain because they lack reliable information about the quality of a social relationship, this could be labelled either informational uncertainty or relational uncertainty. A good example of this is Weary and Edward's (1996) concept of causal uncertainty. On the one hand, this can be categorized as informational uncertainty as it arises due to insufficient information about the causal conditions of events. On the other hand, it can be categorized as relational uncertainty because individuals feel uncertain about events in the *social* world, including our social relationships with others.

2.1.5 The current focus: Personal uncertainty

The previous overview pointed out that uncertainty is a broad concept, including several sub-concepts such as informational, relational, and self-uncertainty. In the current dissertation, I focus on *personal uncertainty*, comprising relational and self-uncertainty. This type of uncertainty is particularly relevant with regard to perceptions of and reactions to trust-related information (see Chapter 2.4), which is a central aspect of the current dissertation. As noted above, informational uncertainty may at times overlap with aspects of relational or self-uncertainty, but it is not the focus of this dissertation. Figure 1 illustrates the different kinds of uncertainty, their potential interrelation, and the focus of this research on personal uncertainty.

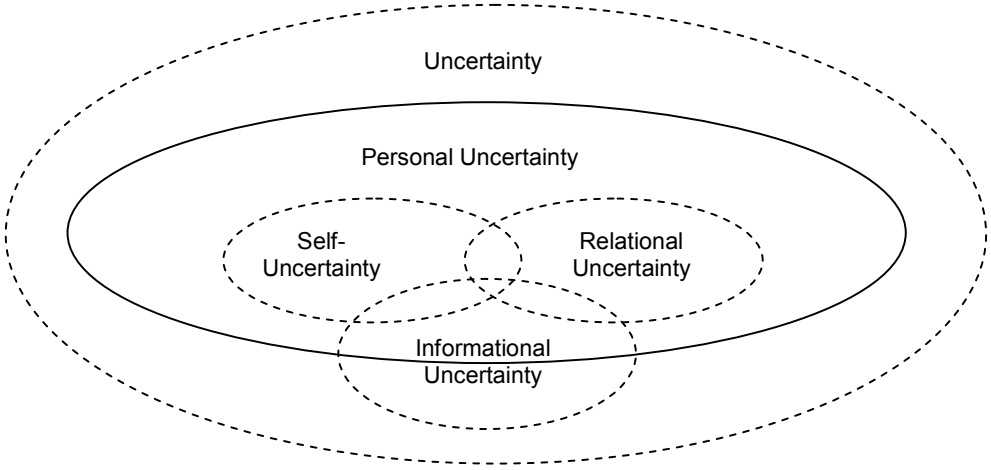

Figure 1. Summary of the different types of uncertainty presented in Chapter 2.1 and their interrelation. The current research focusses on personal uncertainty, including both self- and relational uncertainty. Informational uncertainty may sometimes be congruent with specific aspects of personal uncertainty.

In the studies presented here, relational uncertainty will be conceptualized as insecurity about how one will be treated by another party (by a company in Studies 1 and 2; by a player in a game in Study 3). Self-uncertainty will be operationalized as experienced uncertainty during a selection procedure (Studies 1 and 4), uncertainty during a game (Study 3), salience of self-uncertainty (Studies 5, 6, and 9; Van den Bos, 2001a), social comparison orientation (Study 7; Gibbons & Buunk, 1999), and emotional uncertainty (Study 8; Greco & Roger, 2001). There are multiple sources of uncertainty, both within the individual and in the social situation. Accordingly, uncertainty will be conceptualized as an individual difference variable (social comparison orientation in Study 7; emotional uncertainty in Study 8) and as a contextual factor (uncertainty during a selection procedure or a game in Studies 1, 3, and 4; uncertainty about another party in Studies 1, 2, and 3; salience of self-uncertainty in Studies 5, 6, and 9). By doing so,

this dissertation aims at addressing multiple aspects of the complex construct of personal uncertainty.

2.1.6 Uncertainty in organizational contexts

Uncertainty plays a decisive role in organizational life (e.g., Hogg, 2007), and an organizational context was therefore chosen for the current dissertation project. In organizations, uncertainty can arise from job characteristics, like perceived job insecurity (e.g., Greenhalgh & Rosenblatt, 1984; Sverke, Hellgren, & Näswall, 2002), unclear norms and performance standards (e.g., Diekmann, Barsness, & Sondak, 2004), insufficient communication (e.g., Berger & Calabrese, 1975), or role ambiguity (e.g., O'Driscoll & Beehr, 1994). Changes within an organization, such as reorganizations, mergers, or downsizing, may also create insecurity and uncertainty (e.g., Allen, Jimmieson, Bordia, & Irmer, 2007; Schweiger & DeNisi, 1991). Furthermore, feelings of uncertainty can be fostered by external factors such as unstable financial markets, changes in the political system, or shifts in the demographic structure (e.g., Milliken, 1987).

The studies presented here were mainly conducted in the context of personnel selection. Application procedures are characterized by high levels of ambiguity, unspecific job descriptions, and unpredictable results of the application process (e.g., Bell, Ryan, & Wiechmann, 2004; Shapiro & Kirkman, 2001; Truxillo, Steiner, & Gilliland, 2004). It is often unclear whether one is sufficiently qualified for the job, whether the job will satisfy one’s expectations, whether one will fit well into the team and the organization, or how the organization will behave in the future. These aspects are likely to promote applicants’ personal uncertainty.

2.2 Dealing with uncertainty

It has been argued that reducing uncertainty about our environment is critical in order to survive (Tolman & Brunswik, 1935). *Personal uncertainty* is normally not life-threatening, but it poses a threat to identity and is usually experienced as highly unsettling and aversive (e.g., Hogg, 2007; Sorrentino & Roney, 1986; Van den Bos & Lind, 2002). Individuals are therefore motivated to diminish uncertainty about the future, the social world, their relationships, and the self. This chapter elaborates on people's motivation to manage personal uncertainty (Chapter 2.2.1) and discusses how this goal can be achieved (Chapter 2.2.2).

2.2.1 Motivation to cope with personal uncertainty

Several theories have addressed the resolution of uncertainty as a core human motive. In his theory of motivation, Maslow (1943) proposes five independent sets of basic human needs: physiological, safety, affection, esteem, and self-actualization needs. These motives are ordered in a hierarchy, such that the most basic needs have a higher priority than higher order needs. Higher order needs are only activated when the more fundamental needs are satisfied. Physiological needs are the most elementary ones, directly followed by the need for safety and security. Thus, establishing security and resolving uncertainty is a central human motive that has a high priority in the need hierarchy.

Kagan (1972) distinguishes between primary and secondary motives and considers the resolution of uncertainty as one of three primary human motives (along with hostility and mastery). Depending on the source of uncertainty, different strategies may be chosen to resolve it, for example ignoring uncertainty, reassuring oneself, seeking close and reassuring relationships, or assimilating, removing, or escaping from a discrepant event that caused the uncertainty. Secondary motives, such as dominance or

dependency motives, often act in the service of the primary motive of reducing uncertainty. If the individual cannot resolve the experienced uncertainty, then fear, anxiety, distress, shame, and guilt may arise.

Uncertainty resolution is also a central element of Festinger's (1954) theory of social comparison processes. Festinger argues that individuals have a basic drive to attain certainty and clarity about aspects of the self and that resolving uncertainty is a key determinant of human cognition and behavior. Individuals want to know whether their beliefs are correct and what they are or are not able to do, because inaccurate evaluations can have fatal consequences. Therefore, individuals strive to evaluate their opinions and abilities as accurately as possible in order to reduce uncertainty about the self. Since the non-social world often does not allow for objectively assessing one's beliefs and skills, individuals do so by engaging in social comparison processes. That is, they diminish uncertainty by comparing their opinions and abilities with those of others.

The need for uncertainty resolution has also been discussed in the context of interpersonal relations. Holmes and Rempel (1989) argue that coping with uncertainty constitutes a major challenge in close relationships and is a driving motivational force in individuals' encoding of their partner's actions. Berger and Calabrese (1975) assume that a primary concern of individuals in initial interactions is to reduce uncertainty about other people and the self, to make sense about other's and ones own behavior, and to render future interactions predictable. The greater the uncertainty, the stronger is the desire to reduce it. Verbal communication, nonverbal affiliative expressiveness, and information seeking behavior can decrease the level of uncertainty.

According to Hogg (e.g., 2000, 2007), being uncertain about oneself and others is aversive and comes along with limited control over one's life. In his uncertainty identity theory, uncertainty reduction is considered to be a core human motive. When individuals feel uncertain, behavior is triggered that is directed at reducing the experienced

uncertainty. Similarly, Van den Bos (e.g., 2009) argues that individuals have a basic need to feel certain about themselves, the world, and their place within the world. Feeling uncertain about oneself undermines this need and can pose a threat to the meaning of life. Thus, people want to resolve personal uncertainty or at least render it manageable or tolerable. Moreover, experiencing personal uncertainty is alarming and indicates that a situation is potentially dangerous, causing people to attend and respond quickly to the event that caused the uncertainty in order to deal with it (Van den Bos et al., 2008).

It should be noted that people do not always want to reduce uncertainty, but sometimes seek out uncertain situations, enjoy being uncertain, ignore uncertainty, or do not care about being uncertain (e.g., Carroll et al., 2010; Hogg, 2007; Sorrentino & Roney, 1986; Van den Bos, 2009). Hogg (2007) points out that people do not blindly seek to reduce all types of uncertainty. When uncertainties do not matter to someone, such as being uncertain about cricket rules without being a cricket fan, this person should be relatively indifferent about the experienced uncertainty. The motive of uncertainty resolution is primarily activated when uncertainty is related to the self, because this type of uncertainty is especially uncomfortable. Van den Bos and Lind (2002) acknowledge that a life without any uncertainties would be rather boring and that people are sometimes motivated to seek rather than to resolve uncertainty. In line with this reasoning, Wilson, Centerbar, Kermer, and Gilbert (2005) demonstrate that experiencing uncertainty about the nature of a positive event is pleasant, and that reducing this uncertainty reduces positive emotions (see also Kurtz, Wilson, & Gilbert, 2007). However, positive or neutral reactions to uncertainty are mostly associated with informational uncertainty. By contrast, feeling uncertain about oneself or one's relationships with others is usually threatening and aversive and motivates individuals to cope with this uncertainty (Van den Bos, 2009).

In sum, individuals mostly have the desire to feel safe and secure, experience control over their life, render social interactions predictable, and make sense of themselves, their life, and the social world. In short, they are motivated to manage personal uncertainty (see also McGregor et al., 2001; Sedikides & Strube, 1997; 1996).

2.2.2 How can personal uncertainty be managed?

There are many different ways how individuals can cope with uncertainty about themselves and their relationship with others. For example, people can compare their cognitions and behaviors with those of others in order to evaluate their beliefs and abilities and thereby reduce uncertainty about the self (e.g., Festinger, 1954; Gibbons & Buunk, 1999). Communicating with an interaction partner and thereby gathering information about that person also constitutes a means of uncertainty reduction (Berger & Calabrese, 1975). Other possibilities of dealing with uncertainty are to establish routines (Becker & Knudsen, 2005), to endorse superstitious beliefs, or to resort to superstitious strategies (e.g., Case, Fitness, Cairns, & Stevenson, 2004; Felson & Gmelch, 1979; Malinowski, 1954). People also tend to defend their cultural world views (terror management theory; e.g., Burke, Martens, & Faucher, 2010; Solomon, Greenberg, & Pyszczynski, 1991; see also Van den Bos, Poortvliet, Maas, Miedema, & Van den Ham, 2005), defend their own religion (e.g., Van den Bos, Van Ameijde, & Van Gorp, 2006), cling to more conservative political ideologies (Jost et al., 2007), or become more extreme about their values, goals, and attitudes, and emphasize to be convinced and certain about them (compensatory conviction; e.g., McGregor & Marigold, 2003; McGregor et al., 2001). All these strategies can contribute to the goal of coping with uncertainty.

2.2.2.1 Managing personal uncertainty via relational information

Another important way to manage personal uncertainty is via *relational information*. This is the focus of the current dissertation and will be detailed below. By the term relational information I refer to knowledge that informs us about our social environment and the social relationships we have with others, and that helps us evaluate these relationships. This kind of information has also been labelled social information (Kramer, 2001; Weary & Edwards, 1994).

According to uncertainty identity theory (Hogg, 2000, 2007; Hogg & Mullin, 1999), individuals cope with self-uncertainty via self-categorization and group identification. The theory has its roots in social identity theory (Tajfel, 1969, 1974; Tajfel & Turner, 1979) and self-categorization theory (Turner, 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), which state that people tend to categorize themselves into social groups to form or maintain a social identity. Social identity is a person's knowledge that s/he is a member of a social group (e.g., race, gender, occupation), associated with an emotional, mostly positive, value. Along with personal or self-identity, social identity constitutes a central part of an individual's identity. Individuals typically possess multiple social identities, depending on the various social groups and categories to which they belong (Tajfel & Turner, 1979). Hogg (2007) argues that identifying with and integrating into a group gives individuals a sense of who they are and how they should feel, think, and behave. Thus, group identification decreases uncertainty about the self. Furthermore, because categorization of the self also entails categorization of other individuals, group identification reduces uncertainty about the behavior of others and one's relationships with them. Moreover, since group members tend to share similar values, group identification validates individuals' world- and self-views, thereby further decreasing uncertainty. In sum, identifying with a social group helps individuals defining

and understanding themselves, others, and their relationships with others, and thus constitutes an effective way to diminish personal uncertainty. As a consequence, Hogg argues, uncertainty and the wish to reduce it motivate individuals to identify with groups. This assumption was supported in studies showing that individuals who feel uncertain identify more strongly with their real or experimentally assigned group, especially when the group is highly entitative[3] (Hogg et al., 2007).

Other authors make similar assumptions. For example, Kagan (1972) assumes that when individuals feel uncertain, they strive for reassuring relationships with others because such relationships have helped decrease uncertainty in the past. Baumeister and Leary (1995) postulate that humans have a fundamental drive to establish and maintain significant social relationships, which they label the 'need to belong'. Although the authors do not explicitly refer to the motive of uncertainty resolution, they propose that the need to belong has evolved because group membership is associated with a protective value and reduces the risk of possible threats and harms. In other words, the authors assume that forming social bonds limits uncertainty.

Importantly, not any identification or interaction with any social group is equally likely to help deal with uncertainty. According to Lind (2001), social interaction entails not only chances, but also risks (the *fundamental social dilemma*, see Chapter 2.1.1). Being rejected from a group poses a threat to social identity and one's self-worth, and uncertainty may in fact be amplified rather than resolved. To minimize the risk of being excluded or exploited, it is essential to find out whether integration into a group and cooperation with this group is advisable. It is therefore important to evaluate the quality of the relationship with the group (or with a representative of that group) in question. If

[3] An entitative group has clear boundaries and internal structure, is internally homogeneous, has a common fate and common goals, and is characterized by social interaction (Hogg et al., 2007).

the relationship is positive, interaction is advisable; if the relationship is potentially harmful, it is better not to cooperate.

How can individuals evaluate the quality of social relationships and thereby diminish uncertainty? One way to do so is to use cues that inform about the likelihood of social integration and the quality of social relationships, that is, to *relational information*. For example, the uncertainty management model (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002, 2010) posits that fairness information helps reduce uncertainty. Knowing that an interaction partner behaves in a fair manner allows for interpreting and predicting the other person's actions and helps decrease uncertainty about the other party. Also, fair treatment indicates that one is a respected and valued member of a social group and reassures individuals of their status within the group. Fairness thereby communicates important identity-relevant information (Tyler & Blader, 2003; Tyler & Lind, 1992), which in turn alleviates personal uncertainty (see also Chapter 2.6 for more details).

I propose that a particularly valuable type of relational information in terms of assessing relationship quality and dealing with personal uncertainty is whether one can *trust* another party. This assumption will be explicated in Chapter 2.4. In the next chapter, the concept of trust will be introduced.

2.3 Trust

Trust is of major concern in various kinds of social relationships and has been studied by a multitude of disciplines, such as sociology, economics, and psychology. It plays an important role in interpersonal relationships, groups, and organizational contexts, and constitutes a critical factor in societal functioning (Kramer & Cook, 2004).

One of the most widely used definitions of trust has been proposed by Rousseau, Sitkin, Burt, and Camerer (1998). The authors define trust as "a

psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (p. 395). That is, people who trust someone can be exploited, or otherwise harmed, but rely on the interaction partner to act in a manner that is beneficial or at least not harmful to them. This implicates that trust is independent of the ability to influence or control the other party (Mayer, Davis, & Schoorman, 1995).

Trust presupposes a dyadic relationship between a trustor (the trusting party) and a trustee (the party to be trusted; Mayer et al., 1995). The trustor and the trustee may be individuals, groups, or organizations (e.g., Rousseau et al., 1998). Hence, trust can take different forms, such as interpersonal trust (an individual's trust in another person; e.g., Simpson, 2007), organizational trust (an individual's trust in an organization; e.g., Robinson, 1996), or interorganizational trust (trust between two organizations; e.g., Gulati & Nickerson, 2008). This dissertation mainly focuses on organizational trust.

2.3.1 Why do individuals trust?

There are different reasons why people trust in others, and two major accounts will be contrasted here. On the one hand, *instrumental models* are based on rational choice considerations and assume that individuals trust in others because they pursue self-interested motives and seek to maximize their outcomes. This form of trust has been labelled *calculative trust* (e.g., Williamson, 1993). According to instrumental accounts, trust emerges when a person believes that the actions of another person will be in aid of her or his own economic benefits. However, instrumental models proved insufficient to fully explain why individuals trust (Tyler & Kramer, 1996).

*Relational model*s, on the other hand, take a different perspective, arguing that trust can also be non-instrumental in nature and distinct from motives of self-interest

(Tyler & Kramer, 1996). These models state that individuals care about trust because it conveys feelings of security and belongingness, fosters identity, assures interpersonal care and concern, and provides information about whether one is valued by a group and will be treated well (e.g., Lewicki, Tomlinson, & Gillespie, 2006; McAllister, 1995; Tyler & Lind, 1992). This form of trust has been labelled *relational trust* or, at its broadest scope, *identity based trust* (Rousseau et al., 1998). Note that instrumental and relational models are not mutually exclusive but account for different aspects of why individuals trust (see also Tyler & Lind, 1992).

It has been argued that different types of trust occur in different relationships. While calculus based trust is said to be typical for economic exchange relationships, relational trust is more characteristic for longer-term relationships with repeated interactions in which emotional bonds have been formed (e.g., Rousseau et al., 1998). In principle, however, all forms of trust can occur in all types of relationships. Trust can transform in the course of a relationship and can take different forms within the same relationship. For example, Rousseau and colleagues (1998) propose that encounters often begin with the formation of calculative trust. When the other party has proven to be reliable and dependable in past interactions, relational trust may develop (see also Lewicki & Bunker, 1995, 1996; Lewicki et al., 2006; Shapiro, Sheppard, & Cheraskin, 1992).

I assume that relational trust can also emerge based on *indirect* experiences with another party. Observing interactions between a party and others, or being told of such interactions, may give rise to positive expectations about the trustee's intentions and may create relational trust. Thus, I argue that personal experience of another party's behavior is not a necessary condition for relational trust to develop. To give an example, imagine that a person meets an institution's representative for the first time. It is possible that this person trusts the institution or its representative to have positive intentions and

adhere to specific rules, merely based on the institution's positive reputation. Thus, trust may occur without prior personal interaction.

2.3.2 Cognitive, affective, and behavioral elements of trust

Several subfactors of trust are differentiable, namely cognitive, affective, and behavioral components (e.g., Lewicki et al., 2006; Lewis & Weigert, 1985; McAllister, 1995). The *cognitive* element of trust captures a person's judgments, beliefs, and expectations about the other party's trustworthiness. It is based on a cognitive process in which individuals decide whom, how, when, and why to trust. The *affective* element relates to the emotional bond between two parties and the emotional investments made. The *behavioral* element involves the enactment of a particular (e.g., risky) behavior based on the expectation that the other party will act in a trustworthy manner (Lewis & Weigert, 1985).

Whereas the cognitive and affective components are immanent elements of trust, the behavioral component can be interpreted as a consequence rather than a subfactor of trust (McAllister, 1995). The affective component may in principle be present in all types of relationships, but is most typical for close interpersonal relationships (Lewicki et al., 2006; Lewis & Weigert, 1985). The cognitive element is usually predominant in and most typical for organizational contexts (see Mayer et al., 1995; Schoorman, Mayer, & Davis, 2007). This dissertation will therefore focus on the cognitive component of trust.

2.3.3 A cognitive model of organizational trust

Adopting a cognitive approach to trust, Mayer and colleagues (1995) developed a model of organizational trust that was later updated and refined (Schoorman et al., 2007). The authors argue that trust is determined by two key elements: the trust propensity of the trustor and the trustworthiness of the trustee.

Trust propensity. Trust propensity is an individual difference variable and refers to a trustor's dispositional willingness to trust others. It has an impact on how much a person will trust another party, over and above the specific characteristics of that party. On a continuum, the two extremes of trust propensity would be on the one end a person who trusts regardless of the circumstance that there is no reason to trust (blind trust), and on the other end a person who never trusts, independent of factors indicating that trust is appropriate. Trust propensity varies across individuals depending on their prior experiences, personality, and cultural background.

Trustworthiness. Trustworthiness refers to attributes of the trustee. Several characteristics have been proposed in the literature that determine a party's trustworthiness. Based on these previous considerations, Mayer and colleagues (1995) conclude that the factors of ability, benevolence, and integrity constitute a major part of trustworthiness and contribute individually to it. In order to be deemed trustworthy, a trustee must have all three characteristics. The more pronounced each component is, the higher the perceived trustworthiness will be.

Ability comprises a party's skills, competence, and expertise which enable the party to be influential within a particular domain. In this sense, the factor of ability represents the domain specific nature of trust. For example, when a person has high ability in a technical area, but low ability in the area of interpersonal communication, the person may be trusted to solve analytic technical tasks, but not to communicate with important business partners. Ability can also be understood in more general terms: general ability would reflect that a party is capable of managing a variety of different tasks in a competent manner.

Benevolence is ascribed to a trustee when s/he is believed to have positive intentions towards the trustor, irrespective of potentially self-interested motives. It implies that the trustee has some sort of attachment to the trustor. Benevolence is positively

related to a trustee's altruistic behavior, truthfulness, and loyalty. To give an example, in a relationship between a mentor and a protégé, the mentor would ideally be benevolent in that s/he helps the protégé without being required to do so and without receiving extrinsic rewards.

Integrity is the extent to which the trustee complies with specific rules or principles which the trustor finds acceptable. These include, among others, behavior which is congruent with what the trustee says or promises, consistency of past behavior, compatibility of the trustor's values and beliefs with the principles of the trustee, a strong sense of justice, and credible communication by other parties about the trustee.

The current dissertation focuses on trust as a psychological state towards another party, that is, an individual's subjective perceptions, beliefs, or attitudes regarding a party's trustworthiness. The focus is not on trust as a dispositional construct (i.e., trust propensity) or a party's objective trustworthiness (e.g., the measurable ability, benevolence, or integrity of a party). I recognize that the psychological state of trust is influenced by individual difference variables, characteristics of the trustee, and other contextual factors, but these separate influences on trust will not be differentiated here. Rather, the central variable of interest is the trustor's aggregate subjective trust evaluation of another party.

Consequences of trust. Mayer and colleagues (1995) further propose in their model that trust influences subsequent attitudes and behaviors, for example risk taking. A growing body of research shows that trust is an important determinant of a multitude of positive organizational outcomes (for meta-analytic evidence, see Colquitt, Scott, & LePine, 2007; Dirks & Ferrin, 2002). Trust is positively related to openness in communication (e.g., Smith & Barclay, 1997), exchange of resources (e.g., Tsai & Ghoshal, 1998), job performance (e.g., Dirks, 1999), acceptance of decisions (e.g., Tyler & Degoey, 1996), satisfaction with the job (e.g., Driscoll, 1978), organizational

citizenship behavior (e.g., McAllister, 1995), and organizational commitment (e.g., Pillai, Schriesheim, & Williams, 1999). Moreover, trust is negatively related to conflict between partners (e.g., De Dreu, Giebels, & Van de Vliet, 1998), turnover intentions (e.g., More & Tzafrir, 2009), and counterproductive work behavior (e.g., Marcus & Schuler, 2004). In the context of personnel selection, an interesting and important dependent variable is organizational attraction, which captures how attractive individuals rate an organization as their potential employer (Highhouse, Lievens, & Sinar, 2003). Analogous to the relationship between trust and desirable outcome variables listed above, trust in the organization is likely to have a positive impact on applicants' perceived attractiveness of the organization. Organizational attraction will therefore be a central dependent variable in this dissertation.

2.3.4 Trust and distrust: Uni- versus two-dimensional approaches

Researchers considerably disagree on the dimensionality of trust. According to *unidimensional approaches*, trust and distrust represent two ends of a single, bipolar trust-distrust continuum (e.g., Mayer et al., 1995; Rotter, 1971; Schoorman et al., 2007). In this tradition, high trust is equated with low distrust, and low trust is equated with high distrust (e.g., Stack, 1988; Tardy, 1988). Sometimes trust and distrust are also regarded as functionally equivalent constructs (e.g., Lewis & Weigert, 1985). An example of the unidimensional approach is Mayer and colleague's (1995) model of organizational trust described in Chapter 2.3.3.

Conversely, *two-dimensional approaches* hold that trust and distrust are separate constructs which are independent of each other but may occur simultaneously (e.g., Lewicki, McAllister, & Bies, 1998; Lewicki et al., 2006; McKnight & Chervany, 2001). Lewicki and colleagues (1998) define trust as "positive expectations regarding another's conduct" and distrust as "negative expectations regarding another's conduct"

(p. 439). In complex relationships, the authors argue, there may be reasons to at the same time trust and distrust the other party. For example, a person may trust a friend to keep a secret but distrust the friend to take care of children. The authors propose a model in which conditions of low and high trust are combined with conditions of low and high distrust. When trust is high and distrust is low, individuals can have confidence in the other and do not need to be suspicious. The parties are likely to identify with each other's beliefs and values and to support each other. When trust is low and distrust is high, individuals have no reason to have confidence in the other and are well advised to be watchful. Relationships are characterized by negative experiences, behaviors are monitored, and resources are withheld. When both trust and distrust are low, individuals neither have reason to be confident of the other nor to be fearful of the other's actions. There is no intimacy or closeness in the relationship, and the parties accept each other's privacy. When both trust and distrust are high, there is reason to have confidence in the other, but also reason to be suspicious and watchful. Both parties are likely to have shared as well as separate goals, and relationships involve both positive and negative experiences. According to Lewicki and colleagues (1998), a two-dimensional approach better captures the complex and multifaceted dynamics of social relationships in which people do not simply trust or distrust another party, but relate to each other in multiple ways.

Objecting to this perspective, Schoorman and colleagues (2007) argue that unidimensional approaches can also account for the multiplex nature of relationships and for the notion that a person can at the same time trust and distrust another party. Since trust, and in particular ability, is domain specific (see Mayer et al., 1995), one can trust a party in domain A, but distrust the party in domain B. Moreover, the authors point out that some theorists who argue for a two-dimensional approach conceptualize trust and distrust as constructs which are *opposite* to each other (e.g., McKnight & Chervany,

2001), which questions the added value of treating them as separate concepts. They further note that some researchers who study the construct of distrust, as distinct from trust, simply reverse-score instruments that were initially developed to measure trust, which further militates in favour of a uni- rather than a two-dimensional approach. Schoorman and colleagues (2007) conclude that there is "no credible evidence that a concept of distrust that is conceptually different from trust is theoretically or empirically viable" (p. 350). Reviewing the organizational literature on trust, Dirks and Ferrin (2001) acknowledge that trust may consist of different dimensions, but point out that nearly all studies they found treated trust as a unidimensional construct. The authors therefore subscribe to the unidimensional approach.

This approach is also adopted in the present dissertation. Trust will be conceptualized as one-dimensional construct, with high trust representing one end of the continuum, and low trust or distrust representing the other. It is recognized that low trust and distrust are not identical, but they are viewed as representing the same end of the trust continuum. In this sense, distrust constitutes a strong form of low trust.

2.4 Trust as a means of managing personal uncertainty

A central assumption underlying the current dissertation is that trust-related information—that is, knowledge about another party's trustworthiness—helps individuals cope with personal uncertainty. In the following, the literature relevant for this assumption will be summarized.

Discussing trust in the context of close relationships, Holmes and Rempel (1989) note that "the development of trust is perhaps best described as a process of uncertainty reduction" (p. 190). In a relationship, particularly at the beginning, individuals are uncertain about whether and how strongly a partner is committed to the relationship. A prime goal of individuals is therefore to evaluate the quality and the strength of the

partner's relationship attachment. People do so by coding the partner's behavior for signals of her or his attachment to the relationship, such as the partner's benevolence, cooperativeness, reliability, and honesty. These characteristics indicate that the partner is trustworthy and diminish the feelings of uncertainty in the relationship. Similarly, Boon and Holmes (1991) propose that trust is a valuable indicator of relationship quality. Hence, they consider information about another party's trustworthiness as a central type of relational information. Trust-related information enables individuals to assess whether interaction with another party will be risky or safe and helps reduce uncertainty with respect to the course and outcomes of a relationship.

Sorrentino and colleagues (1995) propose that "trust is the antithesis of doubt: It is conceptualized as a state of felt security that marks at least a temporary resolution of feelings of uncertainty" (p. 314). According to the authors, when individuals are uncertain, they engage in hypothesis testing and search for information about the partner's commitment and attitude towards the relationship. When an individual comes to the conclusion that the partner can be trusted it is likely that uncertainty will be reduced.

Dirks and Ferrin (2001) propose that trust influences how individuals interpret past and present behavior of the other party and helps make sense of others' actions. In doing so, people can better understand and interpret their relationships and interactions with others. Trust also makes interactions more predictable because it affects how individuals predict future actions of the other party. These characteristics of trust lead to reduced ambiguity and uncertainty about relationships with others.

According to Yamagishi and colleagues (Yamagishi et al., 1998; Yamagishi & Yamagishi, 1994), when people engage in social interactions they face the risk of being exploited, and this causes feelings of uncertainty. The authors suggest that trust in others provides a solution to such social uncertainty, because trust significantly decreases the chance of being cheated on or exploited in social relationships.

A similar point is made by Lind (2001). He argues that trust is crucial for resolving the *fundamental social dilemma* and the associated uncertainty (see Chapter 2.1.1). In essence, the dilemma describes the circumstance that cooperation can entail both chances (e.g., assuring self-identity or desirable outcomes) and risks (e.g., being exploited or rejected). In order to minimize the potential risks of social interactions, it is necessary to evaluate the quality of the relationship with the other party. As Lind notes, "if one chooses to behave cooperatively, one would like some guarantee—or at least some expectation—that others will not exploit that cooperative behavior" (Lind, 2001, p. 62). Lind further argues that a party's trustworthiness is a central indicator of relationship quality. It signifies whether the other party can be relied upon to act in a non-selfish manner, thus indicating whether cooperation is reasonable and whether one should invest and become involved in the relationship. When a person or group is trustworthy, the likelihood of exploitation or rejection decreases. At the same time, it becomes more likely that one is treated well, that one will be integrated into the group, and that self-identity can develop. Trust thereby reduces uncertainty associated with the fundamental social dilemma, that is, uncertainty about the social relationships we have with others as well as uncertainty about the self.

According to relational and group value models (e.g., Lind & Tyler, 1988; Tyler & Lind, 1992), individuals care about their status within social systems and want to decrease uncertainty about their social standing. Accordingly, they seek evidence informing them about their standing in the group to which they belong. When a party is perceived as trustworthy, individuals may conclude that the person or group has positive intentions, irrespective of self-interested considerations. It indicates that one is a valued and accepted member of a social group, and this creates social identity. One can expect from a trustworthy person to be there when in need, and this conveys feelings of belongingness and inclusiveness and a sense of security (Kramer, 2001; McAllister,

1995; Tyler & Kramer, 1996). These characteristics of trust counteract feelings of uncertainty and make uncertainty more manageable.

Luhmann (1968) proposes that trust reduces social complexity and uncertainty. Without trust, one would theoretically have to consider every possible consequence of a social interaction in order to decide whether interacting with the other party is reasonable and how one should behave in this interaction. By contrast, if one can trust, the number of possible consequences of an interaction is reduced, because the interaction and its results are likely to be positive and potential undesirable consequences can be excluded from consideration. Moreover, the set of remaining possible (desirable) consequences of an interaction can be analyzed in greater detail. Both of these aspects help decrease uncertainty.

Importantly, it has been argued that not only trust, but also distrust simplifies the complexity of social interactions and reduces uncertainty. While trust is associated with the expectation that others' intentions are beneficial, distrust entails the conviction that the conduct of others is not beneficial or potentially even harmful. In this sense, distrust also reduces the amount of possible consequences of interactions, as they are likely to be negative. Distrust thereby diminishes social complexity and the associated uncertainty (Luhmann, 1968; see also Lewicki et al., 1998; Lewis & Weigert, 1985). Moreover, the knowledge that a party is not trustworthy can prevent a person from interacting or identifying with that party. This would protect the person from possible negative consequences of social interaction (e.g., rejection, exploitation) which might pose a threat to identity and foster uncertainty (cf. Hogg, 2007; Lind, 2001).

In sum, the reviewed literature suggests that trust-related information (including both trust and distrust) is revealing about the quality of social relationships and increases predictability of interactions. Moreover, knowing that a person is trustworthy conveys

feelings of security and belongingness. All these characteristics of trust can help individuals to effectively cope with personal uncertainty.

Strikingly little research has been conducted on whether trust-related information indeed reduces uncertainty. Despite the prevalent discussion of this issue in the literature, the arguments are mostly theoretical in nature and empirical evidence is scarce. Gao, Sirgy, and Bird (2005) demonstrated in a correlational field study that trust in the supplier is associated with the buyer's decreased uncertainty about a purchase decision. The authors conlude that decision making uncertainty can be reduced by building trust. However, the correlational data does not allow for inferences about causal mechanisms. Possibly, high trust indeed diminished uncertainty, but but it is also possible that uncertainty decreased trust or that certainty increased trust. Furthermore, the reported uncertainty referred to individuals' decision making; it is unclear from this study whether trust also reduces personal uncertainty.

The current dissertation aims at providing initial causal evidence for the hypothesis that personal uncertainty can be decreased by means of trust-related information. Moreover, from the literature it is not clear whether uncertainty can only be diminished by means of positive trust-related information (i.e., high trust), or whether negative trust-related information (i.e., distrust) can also reduce uncertainty. As outlined above, I assume that both can be the case.

Hypothesis 1 (trust information reduces uncertainty). *Trust-related information reduces personal uncertainty. This includes both positive trust-related information (high trust) and negative trust-related information (distrust).*

2.5 The sensitizing effect of uncertainty

2.5.1 Personal uncertainty increases sensitivity to trust information

The previous chapter addressed the idea that trust-related information helps individuals cope with uncertainty. Based on this assumption, it is conceivable that trust information is especially relevant under conditions of uncertainty. When individuals feel personally uncertain they should be particularly motivated to find ways of dealing with their uncertainty. One way of doing so is via relational information. It can therefore be assumed that individuals who are uncertain of themselves are especially sensitive to relational information. As detailed above (Chapter 2.4), information about a party's trustworthiness is a central type of relational information. I therefore propose that, under conditions of uncertainty, individuals are particularly sensitive to trust-related information. This means that individuals who feel personally uncertain should react more strongly to feelings of or information about trust and distrust and should rely more on perceptions of a party's trustworthiness to form subsequent judgments.

By contrast, under conditions of certainty, coping with uncertainty is obviously less crucial or not necessary. In consequence, individuals who feel personally certain should be less motivated to find ways of managing uncertainty. Relational information, such as whether another party is or is not trustworthy, should therefore be less important. Hence, individuals who feel personally certain should be less sensitive to trust-related issues. That is, they should react less strongly to perceptions of trust and distrust and should base subsequent judgments less on trust-related information.

Similar ideas have been expressed by other scholars, too. For example, Kramer (2001) argues that individuals who feel secure and safe more readily trust others and tend to take trust for granted without questioning whether this is reasonable. In other words, when feeling certain individuals pay only limited attention to indicators of other's

trustworthiness. By contrast, when individuals feel insecure, they are more hesitant to trust others and have greater concerns about trust. Put differently, uncertain individuals are more attentive to signals of trust and distrust. This means that trust-related issues are likely to be more relevant and to be perceived and processed more attentively when uncertainty is high.

McEvily and colleagues (2003) presume that in uncertain situations individuals "become more dependent on, and more vulnerable to, the decisions and actions of others—both preconditions and concomitants of trust" (p. 1). In other words, trust-related issues should matter most to individuals when they feel uncertain. Similarly, Thomson (1967) notes that in situations characterized by uncertainty, effective and coordinated action is only possible when there is mutual trust, implying that uncertainty renders trust especially important.

A different approach to the relation of trust and uncertainty is provided by Kollock (2006), who analyzes the rice and the rubber market in Southeast Asia. The quality of rice is immediately evident when inspecting it. Therefore, the chance of being cheated or exploited is rather low, because poor quality can easily be detected. Thus, the person who buys the rice faces little uncertainty in the interaction with the seller. Relationships in this market are typically characterized by little loyalty and frequent switching of buyers and sellers. The reputation of the seller, such as her/his trustworthiness, is not so important, and rice is often traded between strangers. By contrast, the quality of raw rubber is difficult to assess and only becomes apparent after the rubber is processed. There is a high risk of being cheated and uncertainty about the relationship with and loyalty of the seller is high. Typically, rubber is traded between a buyer and a seller who have developed personal, long-term relationships in which the seller's reputation of being trustworthy is highly relevant. This analysis implies that trust-

related concerns are not very prevalent when uncertainty is low, but that they play a significant role when uncertainty is high.

Dirks and Ferrin (2001) review the empirical literature on the effects of trust in organizational settings and theorize that the impact of trust on relevant outcomes depends on the concept of situational strength. *Weak situations* have low structure and leave individuals unclear about what behavior is appropriate and how to interpret events. These situations involve high levels of ambiguity and uncertainty. Examples of such situations are foundations of organizations, downsizing, mergers, and other organizational changes. Conversely, *strong situations* have high structure and give individuals guidance about how to behave and how to construe events. These situations entail little or no ambiguity and uncertainty. Dirks and Ferrin (2001) propose that when situations are weak and involve high levels of uncertainty, trust has a main effect on outcomes, such that higher levels of trust result in positive attitudinal and behavioral outcomes. Since other factors which could potentially guide outcomes are not available in weak situations, trust information becomes a guiding force and an important predictor of attitudes and behaviors. By contrast, when situations are strong and involve low or no uncertainty, interpretation of events and behavior becomes superfluous. Attitudinal and behavioral outcomes are "over-determined" by factors other than trust, and the impact of trust on outcomes is diminished. The authors argue that trust therefore has no effect in strong situations. In sum, Dirks and Ferrin (2001) suggest that the impact of trust information is most significant under conditions of uncertainty (in weak situation) but is less or not relevant under conditions of certainty (in strong situation).

Research by Jarvenpaa, Shaw, and Staples (2004) provides suggestive evidence for these conjectures. Virtual teams did or did not take part in a team building intervention. One part of the intervention was a biographical exercise in which each team member sent a message describing him/herself to the other team members including a

personal and a professional self-description, learning objectives, skills, and perceived challenges in virtual team work. A second part of the intervention focused on team dynamics. Participants discussed the importance of several factors for the success of a virtual team, such as commitment, objectives, and responsibilities, and developed a plan how to implement these factors in their team. The goal of the team building intervention was to provide structure and to reduce uncertainty within the team. The results of the study show that when teams had participated in the intervention and the situation was highly structured, trust explained significantly less variance in the dependent variables (e.g., satisfaction, subjective outcome quality, task performance) than when teams had not participated in the intervention and situational structure was weak. Hence, the role of trust was weak when there was an intervention providing structure and reducing uncertainty, but trust mattered most and had the greatest impact when there was no such intervention. A caveat of this study is that the authors did not test whether uncertainty was indeed diminished by the intervention. It is therefore not clear whether differences between the groups were due to differences in uncertainty. Nonetheless, this study is suggestive of the notion that trust is most relevant under conditions of uncertainty.

Notably, considerations on the interplay between trust and uncertainty have mainly been theoretical in nature, but empirical evidence on this matter is scarce. One goal of the current dissertation project was to close this gap by empirically testing whether personal uncertainty leads to an increased sensitivity to trust-related information. This should be reflected in stronger reactions to trust-related information under conditions of uncertainty. Hence, when individuals feel uncertain about themselves or their relationship with others, the association between trust and subsequent judgments should be more pronounced. In this dissertation, the central dependent variable was applicants' perceived attractiveness of the organization they

applied to. I predict that personal uncertainty moderates the positive relationship between trust and organizational attraction, such that this relation is stronger when individuals feel uncertain as compared to when they feel certain. Based on this line of reasoning, I formulate the following hypothesis, to which I refer as the *sensitizing effect of uncertainty to trust*:

> ***Hypothesis 2 (sensitizing effect of uncertainty to trust).*** *Personal uncertainty increases sensitivity to trust-related information, such that the positive relationship between trust and organizational attraction is more pronounced under conditions of uncertainty than under conditions of certainty.*

2.5.2 Synopsis

To summarize the assumptions outlined so far, the theoretical framework of this dissertation including Hypotheses 1 and 2 is illustrated in Figure 2. Personal uncertainty is an uncomfortable state and individuals are motivated to deal with feelings of uncertainty. Identifying with social groups constitutes a means of coping with personal uncertainty since it conveys a sense of inclusiveness and fosters social identity. However, social integration not only offers chances, but also involves risks of exclusion and exploitation. It is therefore essential to gather information about the quality of the relationship with the respective group or person. A valuable indicator of relationship quality is information about a party's trustworthiness. Trust-related information is therefore assumed to diminish feelings of uncertainty (Hypothesis 1). As a consequence, information about a party's trustworthiness should be especially relevant when individuals feel uncertain. Hence, under conditions of personal uncertainty individuals' sensitivity to trust-related information should be amplified (Hypothesis 2).

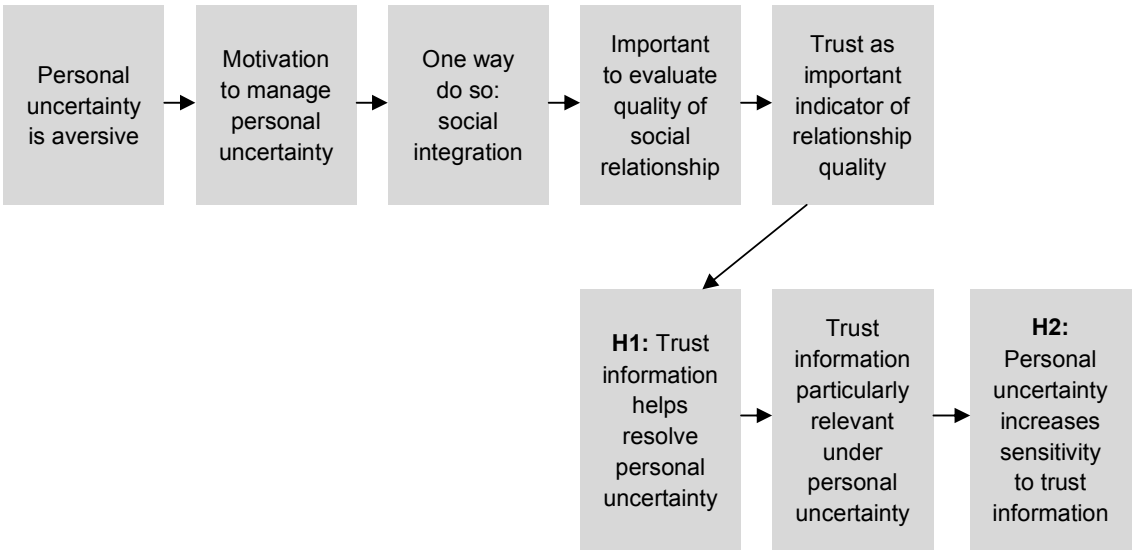

Figure 2. Illustration of the theoretical framework of this dissertation including Hypotheses 1 (H1) and 2 (H2).

2.5.3 Personal uncertainty does not increase sensitivity to relationship-irrelevant information

In the previous chapter I have proposed that personal uncertainty increases individuals' sensitivity to relational information, and in particular to trust information as a central type of such information. The reason for this assumption is that relational information helps manage personal uncertainty. As such, a special role is ascribed to knowledge which informs individuals about the quality of social relationships.

A possible alternative approach is that uncertainty does not sensitize individuals to relational information in particular, but rather that uncertainty increases processing of and sensitivity to any type of information which is relevant for judgment formation, be it relationship-relevant or relationship-irrelevant. Dual processing theories of attitude change, such as the heuristic-systematic-model (e.g., Chaiken, Liberman, & Eagly, 1989; Chen & Chaiken, 1999), have acknowledged the role of uncertainty in judgment

formation. According to the sufficiency principle (Chaiken et al., 1989), individuals invest whatever amount of processing effort is necessary to attain sufficient confidence or certainty in their judgments. When the actual level of certainty is smaller than the desired level of certainty, individuals will invest more effort in information processing. Feeling uncertain functions as a cue that more intense processing is necessary in order to attain greater certainty, and this leads to more effortful systematic processing. Conversely, when the actual and the desired level of certainty are similar, there is no need to increase confidence by intensified information processing. Feeling certain signalizes that further processing is not necessary, resulting in less effortful heuristic processing. In sum, it is assumed that uncertainty increases and certainty decreases the processing effort invested, regardless of the type of information being processed or the kind of judgment being formed.

In a similar vein, Tiedens and Linton (2001) propose that certainty fosters heuristic processing, while uncertainty elicits systematic processing of information in general. The authors suggest that some emotions (e.g., disgust, happiness, anger) are associated with certainty, while other emotions (e.g., fear, hope, worry) are associated with uncertainty. Employing persuasion and stereotyping paradigms, the authors demonstrate that individuals engage in increased information processing (i.e., systematic processing) when primed with emotions associated with certainty, but engage in decreased information processing (i.e., heuristic processing) when primed with emotions associated with uncertainty.

However, several researchers have argued that the impact of uncertainty on information processing is specific to relational or social information. According to Kramer (2001), when individuals feel uncertain about the self and the social world, they are motivated to make sense of their uncertainty. They want to understand the cause of their uncertainty and want to know how they can cope with it. Such efforts of sense making

trigger increased processing of social information. In this sense, a central and specific role is ascribed to more extensive processing of social information under conditions of uncertainty.

Weary and colleagues (e.g., Weary & Edwards, 1994, 1996) propose that people chronically differ in how uncertain they feel about causal relations in the social environment (see also Chapter 2.1.4). This individual difference variable is labelled causal uncertainty. The feeling of uncertainty serves as a cue for individuals that their knowledge or understanding of an event is not sufficient to reach a specific goal or to deal with a situation. As such, uncertainty can be interpreted as a metacognitive feeling which is used as an informational cue in the judgment process (see also Clore, 1992; Schwarz & Clore, 2007). Causal uncertainty is assumed to generate behavior and strategies of information processing that are designed to attain or regain an understanding of the causal mechanisms in the social world. To this end, uncertain individuals search for social information more extensively, process available social information more systematically and thoroughly, and become more sensitive to the social information at hand.

A study by Weary and Jacobson (1997) provides evidence for these assumptions. Participants expected to interview another person and should chose questions for this interview. The questions differed in their potential information gain about the interviewee and included low-, moderate-, and high-diagnostic questions. When it was important for participants to understand the interviewee (because the participant expected to be questioned about the responses after the interview), and when causal uncertainty was situationally activated, individuals high in causal uncertainty selected more questions that were highly diagnostic compared to individuals low in causal uncertainty. Hence, causal uncertainty instigates individuals to search more extensively for diagnostic social information. Relatedly, it has been shown that

depressed individuals (who are characterized by high levels of causal uncertainty) are especially sensitive to information about other persons, such as information about antecedents of others' behaviors (McCaul, 1983) or social comparison information (Weary, Marsh, & McCormick, 1994).

It should be noted that, although these considerations make explicit the role of *social* information in information processing under uncertainty, the reported findings leave open the possibility that the effects arose due to generally increased processing of information (e.g., Chaiken et al., 1989; Tiedens & Linton, 2001). Specifically, social information could be viewed as a sub-category of information in general, and increased processing of social information could be due to increased information processing under uncertainty.

I argue that intensified processing *in general* occurs when uncertainty arises due to a lack of judgment-relevant information (i.e., informational uncertainty). Under such circumstances it is reasonable to assume that any information at hand which is relevant for the judgment is searched and processed more extensively in order to gather information and thereby reduce informational uncertainty. Indeed, in the heuristic-systematic-model, uncertainty refers to the situation when individuals do not have sufficient information to confidently form an accurate judgment (Chaiken et al., 1989). This most closely resembles what has been classified as informational uncertainty here (Chapter 2.1.4).

Diverging from this account, I propose that when individuals feel uncertain about themselves or their relationships with others (i.e., personal uncertainty), sensitivity is not increased with regard to all types of information, but specifically to information that is revealing about social relationships. This is because relational information, such as trust information, helps individuals cope with their uncertainty about the self and others (see Chapter 2.4). By contrast, non-relational (but judgment-relevant) information is

presumably not very useful for managing personal uncertainty, and it would therefore not be reasonable to process such information more extensively or to respond to it more strongly under conditions of personal uncertainty.

In order to demonstrate that there is something special about relational information when individuals feel uncertain about the self or others, one would have to show that personal uncertainty amplifies processing of relational information, but not of non-relational information. This goal was pursued in the current dissertation. I predict that self- and relational uncertainty render individuals more responsive to relationship-relevant information, but not to relationship-irrelevant (but judgment-relevant) information.

Hypothesis 3 (specificity of the sensitizing effect of uncertainty). *Personal uncertainty does not increase sensitivity to relationship-irrelevant (but judgment-relevant) information. That is, relationship-irrelevant information does not have a greater impact on organizational attraction under conditions of uncertainty than under conditions of certainty.*

2.6 The role of procedural fairness

So far, I have argued that personal uncertainty increases sensitivity to trust-related information because it offers a means of managing uncertainty. Importantly, this rationale presupposes that information about a party's trustworthiness is available and that individuals know whether or not they can trust someone. However, Lind and Van den Bos (e.g., Lind, 2001; Lind & Van den Bos, 2002; Van den Bos & Lind, 2002) argue that information about a party's trustworthiness is not always available and that it therefore often cannot serve as a means of coping with uncertainty. The authors suggest

that when information about a party's trustworthiness is missing individuals instead draw on procedural fairness impressions as a substitute for trust information. Before I elaborate on this reasoning, the concept of fairness (and in particular procedural fairness) will be introduced.

Fairness. Fairness plays an important role in various life domains, including organizational contexts. Different types of fairness have been identified, such as distributive, procedural, and interactional fairness. *Distributive fairness* relates to the perceived fairness of outcome distributions and is fostered by a consistency between implicit allocation norms (e.g., equity, equality, or needs) and outcomes (Adams, 1965; Deutsch, 1975). In the context of personnel selection, distributive fairness corresponds to the result of the assessment and the hiring decision (Gilliland & Steiner, 2001). *Procedural fairness* refers to the perceived fairness of the process by which outcomes are determined (Leventhal, 1980; Thibaut & Walker, 1975). In selection contexts, procedural fairness corresponds to the fairness of the selection procedure, selection personnel, and selection policies (Gilliland & Steiner, 2001). Some researchers consider *interactional fairness* as a third type of fairness (e.g., Bies, 2001, 2005; Bies & Moag, 1986), which refers to the interpersonal treatment individuals receive when procedures are enacted. However, other researchers treat it as a sub-concept of procedural fairness (e.g., Blader & Tyler, 2003a; Gilliland, 1993). In this research, interactional fairness is conceived of as a facet of procedural fairness. The focus of the current dissertation is on procedural fairness, because it can be used as a substitute for trust to manage uncertainty when information about a party's trustworthiness is absent. This will be detailed below.

A multitude of empirical studies shows that a process, interaction, or outcome which is perceived as fair is likely to result in desirable attitudes and behaviors towards an organization. These outcome variables include organizational commitment,

organizational identification, job performance, and job satisfaction (see Cohen-Charash & Spector, 2001; and Colquitt, Conlon, Wesson, Porter, & Ng, 2001 for meta-analytic reviews). The main dependent variable in the research presented here will be organizational attraction (Highhouse et al., 2003).

Fairness heuristic theory. As outlined above (Chapters 2.1.1 and 2.4), Lind (2001) proposes that individuals in social relationships face a fundamental social dilemma, since cooperation can entail both chances and risks. This dilemma and the associated uncertainty can be reduced by means of trust information because it indicates the quality of a relationship and helps decide whether cooperation is advisable. However, as Lind argues, trust judgments are often difficult to form and information about a party's trustworthiness is not always accessible. Therefore, trust information often cannot be used as a means of evaluating social relationships and to reduce uncertainty. Lind proposes that fairness impressions can be used as heuristic substitutes for trust. This idea is also reflected in the heuristic substitutability principle (Van den Bos, 2001b), which holds that when relevant information is missing, individuals use available but potentially less relevant information instead.

In contrast to trust judgments, procedural fairness perceptions can be derived from more observable indicators such as respectfulness of communication (Bies & Moag, 1986), bias-suppression, or accuracy (Leventhal, 1980). They can be formed more easily and are often more readily available than trust judgments (see also Van den Bos, Wilke, & Lind, 1998). Moreover, procedural fairness information is an indicator of another party's trustworthiness: Fair procedures suggest that one can trust the other party, whereas unfair procedures signal that the other party should not be trusted. Like trust judgments, fairness judgments—and in particular procedural fairness judgments—provide information about the quality of the relationship and indicate whether cooperation is advisable.

Hence, procedural fairness information can be used as a surrogate for trust information to resolve the fundamental social dilemma when trust information is not available. Lind further notes that when individuals do have information about a party's trustworthiness, they then use this more comprehensive trust information rather than procedural fairness information to evaluate the relationship in question.

Empirical studies provide support for fairness heuristic theory. For example, Van den Bos, Van Schie, and Colenberg (2002) showed that when parents did not know whether they could trust their children's day care organization, procedural fairness impressions (how the organization decided which child gets a place) had a significant influence on how parents evaluated the organization. However, when parents indicated that they knew whether they could trust the organization, perceived procedural fairness had a much weaker effect on parents' reactions. Furthermore, Van den Bos and colleagues (1998) demonstrated in an experiment that only participants who had no information about an authority's trustworthiness were strongly affected by procedural fairness information when rating their satisfaction with outcomes. Conversely, participants who had information about the authority's trustworthiness did not use procedural fairness information to rate their satisfaction.

Uncertainty management model. While fairness heuristic theory only implicitly deals with uncertainty, the uncertainty management model (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002) makes the role of uncertainty more explicit. The central question of the model is how individuals manage uncertainty. In line with fairness heuristic theory, the authors argue that procedural fairness judgments are used as surrogates for lacking trust information to evaluate social relationships and to cope with uncertainty. It is thus proposed that procedural fairness is particularly relevant under

conditions of uncertainty and that individuals are more responsive to fairness when uncertain.[4]

In line with the model's predictions, research has shown that uncertainty moderates the relationship between procedural fairness and subsequent reactions, such that this relationship is more pronounced under conditions of uncertainty (e.g., De Cremer & Sedikides, 2005; Diekmann et al., 2004; Elovainio et al., 2005; Kausto, Elo, Lipponen, & Elovainio, 2005; Müller, Janssen, & Jarzina, 2008; Tangirala & Alge, 2006; Thau, Aquino, & Wittek, 2007; Thau, Bennett, Mitchell, & Marrs, 2009; Van den Bos, 2001a; Van den Bos et al., 2005; Van den Bos et al., 2002; Van den Bos et al., 1998). This effect will here be referred to as the *sensitizing effect of uncertainty to fairness*. For example, Van den Bos (2001a) demonstrated that procedural fairness perceptions have a stronger impact on participants' affective reactions towards how they were treated when uncertainty was salient to participants. When uncertainty was not salient, the effects were weaker. Similarly, Diekmann et al. (2004) found stronger relationships between fairness perceptions and job satisfaction for people who were uncertain (rather than certain) about performance standards and appropriate behavior. The sensitizing effect of uncertainty to procedural fairness has been demonstrated in different contexts (e.g., laboratory studies and organizational settings), for different kinds of uncertainty (e.g., situational uncertainty, dispositional uncertainty), for different facets of procedural fairness (e.g., accurate procedures, having voice), and for different outcomes (e.g., self evaluations, affect, organizational identification).

[4] The assumptions of the uncertainty management model are not restricted to procedural fairness perceptions but apply to other types of fairness as well.

2.6.1 The current research: When trust information is available

Given that procedural fairness can serve as a substitute for trust when trust-related information is missing, a question that arises is the following: What happens when individuals know whether the other party is trustworthy? Does uncertainty sensitize individuals to procedural fairness when trust information is available?

As noted above, fairness heuristic theory and the uncertainty management model predict that procedural fairness information can substitute lacking trust information to cope with uncertainty (Lind, 2001; Van den Bos & Lind, 2002). When information about a party's trustworthiness is available, however, procedural fairness should be less important. Instead, individuals should then directly use the trust-related information rather than procedural fairness information, because trust judgments are often more comprehensive and include more direct information about social relationships than procedural fairness judgments.

A study by Van den Bos and colleagues (1998) provides empirical support of this reasoning. The authors demonstrated that procedural fairness influenced participants' satisfaction with outcomes only when an authority's trustworthiness was unknown. When information about the authority's trustworthiness was available, however, participants did not rely on procedural fairness information (see also Van den Bos et al., 2002).

The argument is further substantiated by Mayer and colleagues' (1995) model of trust (see Chapter 2.3.3). The model holds that a key determinant of trust is the integrity of the trustee. A person's integrity is, amongst others, influenced by the extent to which the trustee has a strong sense of justice as well as the consistency of a party's prior behavior, which is a central element of procedural fairness (see Leventhal, 1980). Hence, fairness in general and procedural fairness in particular affects the perceived

integrity of another party, which in turn has an impact on the party's trustworthiness. This means that procedural fairness is an integral part of trust. Put differently, trust judgments include information about how fair a person is. Importantly, they also encompass important other relationship-relevant components over and above (procedural) fairness information, such as a person's ability or benevolence. Hence, the knowledge that someone is trustworthy involves more information about the other party and one's relationship with that party than knowing that someone behaves in a fair manner.

In line with these considerations, research suggests that trust acts as a mediator in the relation between procedural fairness and subsequent reactions. For example, Aryee and colleagues (2002) tested whether trust mediates the relationship between fairness and work attitudes, such as job satisfaction, turnover intentions, and organizational citizenship behavior. They demonstrated that trust in the organization mediated the relation between procedural (and interactional) fairness and these work attitudes. Other researchers have shown that trust in the supervisor mediates the relationship between procedural fairness and organizational citizenship behavior (Konovsky & Pugh, 1994; Pillai et al., 1999; Wat & Shaffer, 2005).

In this dissertation I will examine whether trust mediates the effect of procedural fairness on organizational attraction (Hypothesis 4). This establishes the basis for the assumption that trust judgments are more comprehensive than fairness judgments and are thus used with higher priority for uncertainty management, which is relevant for Hypothesis 5 presented below.

Hypothesis 4 (mediation hypothesis). *The positive relationship between procedural fairness and organizational attraction is mediated by trust judgments.*

Based on the suppositions outlined above, it can be assumed that when both procedural fairness and trust information are available, procedural fairness is no longer (or only weakly) needed as a substitute for trust and becomes less important for coping with uncertainty. Hence, individuals are potentially no longer very responsive to procedural fairness under conditions of uncertainty. I therefore expect that when both types of information are available, trust information is given a higher priority than procedural fairness information for uncertainty management. Uncertainty should then increase individuals' sensitivity to trust more than to procedural fairness. This possibility was explored in the current dissertation. With regard to trust, individuals who feel personally uncertain should respond more strongly to information about a party's trustworthiness than individuals who feel personally certain (sensitizing effect of uncertainty to trust; see Hypothesis 2). With regard to procedural fairness, individuals who feel uncertain should not (or not as much) differ in their responses to procedural fairness information from individuals who feel certain (sensitizing effect of uncertainty to procedural fairness).

Hypothesis 5 (sensitizing effect of uncertainty to trust vs. fairness). *When both procedural fairness and trust information are available, the sensitizing effect of uncertainty to trust is more pronounced than the sensitizing effect of uncertainty to procedural fairness. That is, personal uncertainty has a stronger moderating influence on the relationship between trust and organizational attraction than on the relationship between procedural fairness and organizational attraction.*

Availability of trust information in the current research. In order to test the proposed hypotheses, the studies presented here were designed in such a way that trust information was available to participants. In the experimental studies, participants were

given information about the trustworthiness of an interaction partner (a person or an organization). For the field studies, a company was chosen that was well known to respondents in advance (both the company itself as well as its products are well known nationally and internationally). Thus, even though personal interaction with the organization had not necessarily taken place, respondents (in this case: job applicants) had some knowledge about the company before they applied, and hence at least some information about the company's trustworthiness was available to them.

2.6.2 Interplay of uncertainty, trust, and procedural fairness

Subsuming the considerations of the preceding chapter, Figure 3 contrasts the assumptions of previous research in the framework of the uncertainty management model with the hypotheses of the current research. The uncertainty management model (Van den Bos & Lind, 2002, 2010) predicts that the positive relationship between (procedural) fairness perceptions and relevant outcome variables is moderated by uncertainty (in particular personal uncertainty), such that this relation is stronger when uncertainty is high (sensitizing effect of uncertainty to fairness). This prediction is based on the assumption that trust information is often not available and that individuals therefore use (procedural) fairness information to manage their uncertainty.

The current research is based on the proposition that there are situations in which information about a party's trustworthiness is available. I assume that under such circumstances individuals draw on the available trust information to manage their personal uncertainty. This should be reflected in a more pronounced relationship between trust and relevant outcome variables when uncertainty is high (sensitizing effect of uncertainty to trust; Hypothesis 2). Moreover, I propose that trust judgments comprise more relational information than procedural fairness judgments, which should be reflected by the fact that trust mediates the effect of procedural fairness on the relevant

outcome variable (Hypothesis 4). Trust information should therefore be particularly valuable in terms of uncertainty management and individuals should rely more on trust than on procedural fairness information to cope with their uncertainty when both types of information are available. Hence, the sensitizing effect of uncertainty to trust should be stronger than the sensitizing effect of uncertainty to procedural fairness (Hypothesis 5).

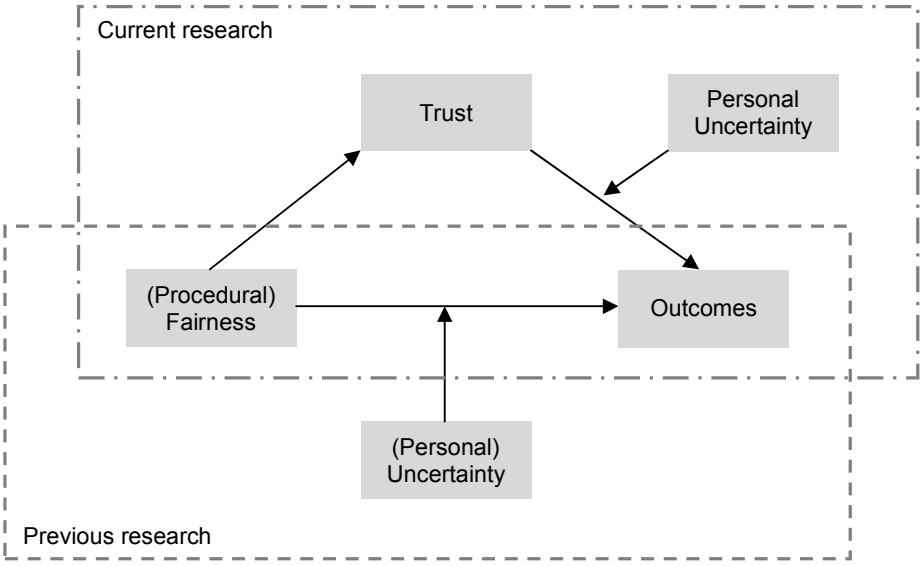

Figure 3. Different foci of previous research (uncertainty managment model; see Van den Bos & Lind, 2002, 2010) and the current research (Hypotheses 2, 4, and 5) on the interplay between (procedural) fairness, trust, outcomes, and uncertainty.

2.7 Overview of hypotheses

For a better overview, all study hypotheses are summarized below. The rationale for the hypotheses was outlined in chapters 2.4 to 2.6.

Hypothesis 1 (trust information reduces uncertainty). *Trust-related information reduces personal uncertainty. This includes both positive trust-related information (high trust) and negative trust-related information (distrust).*

Hypothesis 2 (sensitizing effect of uncertainty to trust). *Personal uncertainty increases sensitivity to trust-related information, such that the positive relationship between trust and organizational attraction is more pronounced under conditions of uncertainty than under conditions of certainty.*

Hypothesis 3 (specificity of the sensitizing effect of uncertainty). *Personal uncertainty does not increase sensitivity to relationship-irrelevant (but judgment-relevant) information. That is, relationship-irrelevant information does not have a greater impact on organizational attraction under conditions of uncertainty than under conditions of certainty.*

Hypothesis 4 (mediation hypothesis). *The positive relationship between procedural fairness and organizational attraction is mediated by trust judgments.*

Hypothesis 5 (sensitizing effect of uncertainty to trust vs. fairness). *When both procedural fairness and trust information are available, the sensitizing effect of uncertainty to trust is more pronounced than the sensitizing effect of uncertainty to procedural fairness. That is, personal uncertainty has a stronger moderating influence on the relationship between trust and organizational attraction than on the relationship between procedural fairness and organizational attraction.*

3 EMPIRICAL PART

Overview of studies. The following section is to empirically test the hypotheses of this dissertation. It is organized in parts A-D, each consisting of one or more studies. In Part A, the prediction is tested that information about a party's trustworthiness reduces personal uncertainty (Hypothesis 1). Part B examines whether uncertainty sensitizes individuals to trust-related information (Hypothesis 2; this prediction is further investigated in Parts C and D). Part C is to test the hypothesis that uncertainty increases sensitivity to relationship-relevant information (here: trust), but not to relationship-irrelevant information (Hypothesis 3). In Part D, it will be explored whether the sensitizing effect of uncertainty to trust is stronger than the sensitizing effect of uncertainty to procedural fairness (Hypothesis 5), and whether potential effects of procedural fairness on organizational attraction are mediated by trust (Hypothesis 4).

The hypotheses were tested by a combination of experimental laboratory studies, experimental field studies, and correlational field studies. This approach was chosen so as to provide causal evidence for the proposed effects and to demonstrate that the results are externally valid and not constricted to the laboratory.

Preliminary statistical notes. For all statistical analyses, test statistics (F, t), statistical significance (p), and effect sizes are reported. The reported effect sizes are Cohen's d as standardized mean difference for two groups; partial η^2 (in ANOVA designs) and R^2 (in regression analyses) as the proportion of variance explained; and r and b as measures of association (see Cohen, Cohen, West, & Aiken, 2003; Olejnik & Algina, 2003; Rosnow & Rosenthal, 2003).

3.1 Part A: Reducing personal uncertainty by means of trust information

Although it has often been claimed in the literature that trust helps deal with uncertainty (see Chapter 2.4), empirical evidence for this claim is scarce. Moreover, it is not clear whether merely positive information (i.e., high trust) decreases uncertainty, or whether negative information (i.e., distrust) can also lead to uncertainty reducion. Part A examines the general prediction that trust-related information reduces uncertainty (Hypothesis 1).

3.1.1 Study 1

Study 1 was to investigate whether trust—that is, positive expectations regarding another party's conduct—influences individuals' experienced self- and relational uncertainty. In particular, an application scenario study was conducted to examine whether information about the trustworthiness of an organization reduces participants' uncertainty during a selection procedure of the company and their uncertainty regarding the relationship with the organization. The prediction was that information about the organization's trustworthiness makes participants feel less uncertain.

3.1.1.1 Method

Participants and design. Sixty-three students of the University of Mannheim participated in an experiment labelled 'Evaluating and Organization' and received 1 Euro and a chocolate bar in return. Sixty per cent of participants were female, the average age was 24.57 years (*SD* = 2.73), and they had been studying for 8.75 semesters (*SD* = 3.57) on average. Participants were generally familiar with application procedures at organizations. Ninety-two per cent had applied to a company before (for example for an internship), the average number of applications per person being 5.32 (*SD* = 5.76).

Participants were randomly assigned to a one-factorial (trust: no information vs. high trust) between subjects design.

Experimental procedure. After entering the laboratory, participants received paper-pencil materials, were led to separate tables, and signed an informed consent form. Participants read the instructions and were asked to imagine that they applied for a job at a company. The scenario read as follows:

> *You have been looking for a job for a while. Recently you found a job advertisement by the company Salis Alba[5] which is in accordance with your profile and which you find very appealing. Since you are keen on getting this job, you send your application to Salis Alba.*

After this, trust in the organization was manipulated. Uncertainty during the selection procedure and uncertainty regarding the company were then measured. This was followed by the manipulation check of trust and demographic variables. Finally, participants were thanked for their participation, paid, and debriefed.

IV: Trust manipulation. Participants read the following text:

> *Two weeks after your application you receive an invitation to a selection procedure at Salis Alba. You have not heard of the organization before and do not know how to evaluate the company.*

Participants in the high trust condition further read:

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[5] The name Salis Alba was chosen from a list of 10 fictitious company names that were pretested to fulfil three criteria. The company should be unknown (1, company is unknown, 7, company is well known), should not elicit especially positive or especially negative associations (1, negative associations, 7, positive associations), and should be perceived as existing in reality (1, company does not exist, 7, company exists). Salis Alba fulfilled these criteria best (company unknown: $M = 1.11$, $SD = .033$; positive or negative associations: $M = 4.11$, $SD = 1.14$; company really exists: $M = 4.22$, $SD = 2.28$) and was therefore chosen as fictitious company for this study and following studies.

> *You are therefore searching the internet for information about Salis Alba. During your search you find a website with evaluations of different companies by employees and former applicants. On this website is a diagram depicting evaluations of Salis Alba in comparison to other companies.*

Participants in the high trust condition then saw a figure with six statements regarding the trustworthiness of the organization and the average degree of agreement with each statement by employees and former applicants (a) of Salis Alba and (b) of other companies for comparison (see Figure 16 in Appendix A for an illustration). Following Mayer and colleagues (1995), the company's trustworthiness was manipulated on the dimensions ability, benevolence, and integrity. Specifically, participants read the following statements: "Everyone is treated well by this company" (benevolence; agreement Salis Alba: 84%; agreement other companies: 56%), "This company would not take advantage of anybody" (benevolence; agreement Salis Alba: 68%; agreement other companies: 51%), "I think this company is very competent" (ability; agreement Salis Alba: 92%; agreement other companies: 52%), "This company has a lot of know how" (ability; agreement Salis Alba: 67%; agreement other companies: 47%), "This company lives up to its promises" (integrity; agreement Salis Alba: 76%; agreement other companies: 60%), and "The principles of this company are well compatible with my own principles" (integrity; agreement Salis Alba: 86%; agreement other companies: 53%). Participants in the low trust condition did not receive this information. All participants were then informed that the day of the selection procedure had finally come.

DV1: Uncertainty during the selection procedure. Participants' uncertainty during the selection procedure was measured with three items, namely "In this situation I would feel uncertain", "This situation would cause feelings of uncertainty", and "The

selection procedure would unsettle me" (1, *strongly disagree,* 7, *strongly agree*). Items were combined to a single index (Cronbach's α = .90).

DV2: Uncertainty about the company. Four items were used to measure participants' uncertainty with respect to the company, reading "I am not sure how this company would treat me in the future", "I am not fully sure how I should evaluate this company", "I am uncertain how the company will behave towards me", and "I am unsure how well I fit in the company" (1, *strongly disagree,* 7, *strongly agree*). Items were combined to a single score (Cronbach's α = .80).

Manipulation check trust. Participants' perceived trustworthiness of the company was measured with a seven-item trust scale by Robinson (1996) and one additional item ("I trust Salis Alba"). Sample items of the trust scale read "I am not sure I fully trust the company" (reversed) and "In general, I believe the company's motives and intentions are good" (1, *strongly disagree,* 7, *strongly agree*). Items were combined to a single index of trust (Cronbach's α = .92).

3.1.1.2 Results

Manipulation check trust. A *t*-test for independent samples revealed that the manipulation of trust in the company was successful. Participants in the high trust condition evaluated the company as significantly more trustworthy (M = 4.71, SD = 0.95) than participants in the no information condition (M = 3.75, SD = 1.02), $t(61) = 3.87$, $p < .001$ (one-tailed), Cohen's d = .97.

Uncertainty during the selection procedure. As indicated by a *t*-test for independent samples, participants in the high trust condition felt less uncertain during the selection procedure (M = 4.14, SD = 1.15) than participants in the no information condition (M = 4.83, SD = 1.33), $t(61) = -2.21$, $p = .015$ (one-tailed), Cohen's d = .56. Results are displayed in Figure 4.

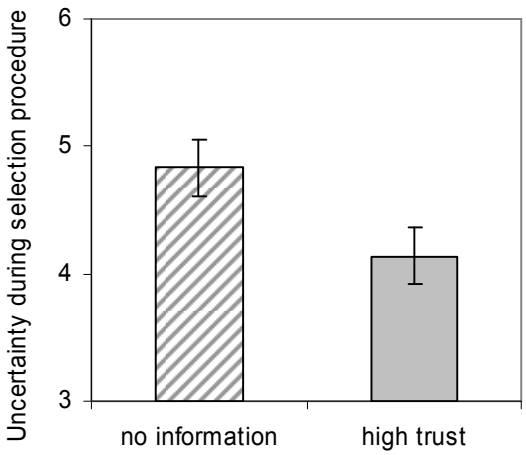

Figure 4. Mean ratings (and standard errors) of uncertainty during the selection procedure as a function of trust (no information vs. high trust) in Study 1. The scale ranged from 1 to 7; higher values represent higher levels of uncertainty.

Uncertainty about the company. Uncertainty regarding the company was subjected to a *t*-test for independent samples. Participants in the high trust condition felt less uncertain with respect to the company (M = 4.26, SD = 1.16) than participants in the no information condition (M = 4.85, SD = 1.27), $t(61) = 1.94$, $p = .029$ (one-tailed), Cohen's $d = .49$.

3.1.1.3 Discussion

Study 1 provides initial evidence for the prediction that trust information can help manage uncertainty by making individuals feel less uncertain. Specifically, participants who were informed that the company to which they had applied was trustworthy felt less uncertain during the selection procedure and were less uncertain with respect to the company than individuals who had no information about the organization. Hence, positive trust-related information constitutes a means of decreasing uncertainty.

Some questions remain open from Study 1. First, it is unclear whether only high levels of trust make individuals feel less uncertain, or whether uncertainty can also be

reduced by low levels of trust. Second, it is conceivable that not only trust itself, but also the mere availability of knowledge about a party's trustworthiness diminishes uncertainty. These possibilities will be investigated in the following two studies. Study 2 is to replicate the findings of Study 1 in a field setting and to investigate whether the salience of trust information can reduce uncertainty. Study 3 will investigate whether both trust and distrust help decrease uncertainty.

3.1.2 Study 2

The aims of Study 2 were twofold. First, the reduction of uncertainty by means of trust information was to be replicated in a field setting. Laboratory experiments, such as Study 1, are explicitly designed to elicit and maximize effects. From such experiments it is not clear whether trust actually decreases *real* uncertainty, that is, uncertainty individuals encounter in a real life situation. Potentially, participants in Study 1 did not profoundly feel uncertain because the situation of a scenario study in the laboratory is not very alarming. It may therefore have been relatively easy to decrease uncertainty in Study 1. Thus, in Study 2 it was investigated in a field study whether real-life uncertainty can be reduced by means of trust information. Specifically, Study 2 was conducted in a company with job candidates who were personally involved in the application process. Such a process likely induces feelings of uncertainty, because it features, for example, high levels of ambiguity, intransparent procedures, non-specific demands and standards, and unpredictable outcomes (e.g., Bell et al., 2004; Shapiro & Kirkman, 2001; Truxillo et al., 2004).

Second, it was examined whether the mere availability of trust information, independent of the level of trust, makes individuals feel less uncertain. Availability of information can be manipulated via the salience of the information, that is, via activating the thought of it, for example by asking individuals to think about that information

(Higgins, 1996). Study 2 used this method to manipulate the availability of trust information.

Note that respondents in this study were job applicants. The level of trust can therefore be expected to be moderate to high—after all, a person would presumably not apply to a company if s/he distrusted the company.

3.1.2.1 Method

Respondents. Respondents were current or former job candidates at a large German aviation company. Of an initial pool of 611 valid e-mail addresses, 220 respondents completed the online-survey, corresponding to a response rate of 36 per cent.[6] The average age was 28.61 years (*SD* = 8.76), 61 per cent were female. A comparison with other applicants of this company suggests that these demographic characteristics of the study sample were representative of individuals applying for jobs at this company. Respondents had either applied for a specific job within the company or were generally interested in the company as a potential employer.[7]

Procedure. Object of investigation of this study was the selection procedure of a German aviation company. The company's selection system is a multiple hurdle process, consisting of an initial online application and selection tool and, in case the online-application was successful, subsequent on-site interviews and tests. Following the current trend in personnel selection to increasingly employ internet-based testing and selection tools (Anderson, 2003; Chapman & Webster, 2003; Lievens & Harris, 2003;

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[6] According to a meta-analysis by Cook, Heath, and Thomson (2000), the mean response rate in web- or internet-based surveys is 34.6 per cent. The response rate in this study can therefore be considered as typical of the employed sampling format. It should be noted that response rates are difficult to compare across studies as they depend on a variety of factors, including pre-notification, incentives, reminders, personal involvement, etc.

[7] A more detailed description of the sample was refrained from due to reasons of data privacy.

Wiechmann & Ryan, 2003), this study focused on the web-based part of the selection process, called *career terminal*. This is a web-based registration and application system via which candidates provide information about their education, practical experiences, skills, and motivation for their application. Candidates additionally complete one or more online-tests depending on the position for which they apply. When a person fulfils all requirements for a specific job and has passed the online-test(s), s/he can proceed to subsequent selection steps.

For the purpose of this study, candidates were invited to take part in an online survey after they had completed their registration at the career terminal. They were informed about the purpose of the survey (assessment of how applicants evaluate the contact with the company via the career terminal) and were insured that participation was voluntary, anonymous, and unrelated to their application. If candidates wanted to take part in the survey, they could activate a link and provide their e-mail address. In order to ensure complete anonymity, both the collection of e-mail addresses and the survey were conducted by an external party (Jana Janssen, University of Mannheim). After providing their e-mail addresses, respondents received a link to the survey via e-mail. A reminder e-mail was sent to all respondents two weeks after the initial e-mail so as to increase the response rate (Dillman, 2000).

At the beginning of the survey, respondents were again informed about the purpose of the study and were assured that participation was voluntary, anonymous, and completely unrelated to their current application or any potential reapplication to the company. After respondents had answered questions regarding the status of their application, the independent variable (trust in the company) and the dependent variable (uncertainty about the company) were assessed. Importantly, the order in which the independent and dependent variables were measured was altered. In one condition trust was measured prior to the assessment of uncertainty, so that trust was salient at the

time the dependent variable was measured. In the other condition, trust was measured after the assessment of uncertainty, so that trust was not salient at the time the dependent variable was measured. After the assessment of the independent and dependent variables, respondents' evaluations of various aspects of the career terminal were assessed, such as usability, comprehensibility, difficulty of the tests, and technical implementation. These were irrelevant for the purpose of the current study and will therefore not be reported in the analyses below. At the end of the survey respondents answered demographic questions, were thanked, debriefed, and were given the opportunity to comment on the survey and their contact with the company in an open response field. Furthermore, they could take part in a raffle to win a prize with a value of 50€.

IV1: Trust. Applicants' trust in the organization was measured with the seven-item trust scale by Robinson (1996). Items were averaged to a single score of trust (Cronbach's α = .76).

IV2: Salience of trust. Respondents were randomly assigned to one of two conditions, trust salient and trust not salient. Salience of trust was manipulated via the order of the questions in the survey. In the trust salient condition, respondents first answered questions about the trustworthiness of the company, followed by questions regarding their uncertainty about the company. In the trust not salient condition, respondents first answered questions pertaining to their uncertainty about the company, followed by questions about the trustworthiness of the company. Thus, when the dependent variable (uncertainty about the company) was assessed, trust was either salient or not salient.

DV: Uncertainty about the company. Uncertainty about the company was assessed with the four items used in Study 1, for example "I am not sure how this company would treat me in the future" (1, *strongly disagree,* 7, *strongly agree*; sample

items see above). Items were combined to a single score of uncertainty (Cronbach's α = .78).

3.1.2.2 Results

Descriptive statistics and relationship between variables. The mean of organizational trust was *M* = 5.88 (*SD* = 0.93), the lowest rating being 1.86 and the highest rating being 7.00 on a scale ranging from 1 to 7. This indicates that the level of trust was moderate to high. The mean of uncertainty about the company was *M* = 2.89 (*SD* = 1.40). Trust was negatively related to uncertainty, *r* = -.55, *p* < .001.

Uncertainty about the company. A hierarchical moderated regression analysis (Aiken & West, 1991) was conducted with uncertainty about the company as dependent variable. The results of this regression analysis are summarized in Table 5 (Appendix B). Trust (centered)[8] and salience of trust (dummy coded; 0 = trust not salient, 1 = trust salient) were entered as predictors in the regression in Step 1, the two-way interaction was entered in Step 2. The full model was significant, R^2 = .36, $F(1, 216) = 39.96$, $p < .001$. Both the main effect of trust, $b = -.84$, $t(216) = -8.16$, $p < .001$, and the main effect of salience of trust were significant, $b = -.63$, $t(216) = -4.09$, $p < .001$. The interaction between trust and salience of trust was not significant, $b = .03$, $t(216) = 0.16$, $p = .87$.

Simple slopes were analyzed to visualize the results. For individuals who had moderate trust in the company (1 *SD* below the mean) as well as for individuals who had

[8] A variable is centered by subtracting the mean of a variable from each subject's score on this variable (Cohen et al., 2003). According to Aiken & West (1991), continuous predictors in a moderated regression analysis should be centered in order to reduce nonessential multicollinearity and to increase the interpretability of the interaction effects. The centered predictor (in this case: trust) is then multiplied with the other predictor(s) (in this case: salience of trust) to form the respective interaction term(s). In the current dissertation, this procedure was applied for all continuous predictors that were entered in a hierarchical moderated regression analysis.

high trust in the company (1 *SD* above the mean) simple slopes were negative, b = -.65, $t(216)$ = -2.95, p = .004, and b = -.60, $t(216)$ = -2.73, p = .007, respectively. The difference between the slopes was not significant, $|t| < 1$. This means that when trust was salient individuals felt less uncertain about the company than when trust was not salient, regardless of the level of trust. Furthermore, among individuals in the trust not salient condition as well as among individuals in the trust salient condition simple slopes were negative, b = -.84, $t(216)$ = -8.00, p <.001, and b = -.81, $t(216)$ = -4.06, p <.001, respectively. The difference between the slopes was not significant, $|t| < 1$. This indicates that the higher the level of trust, the less uncertain individuals felt about the company, independent of the salience of trust. Figure 5 displays the results.

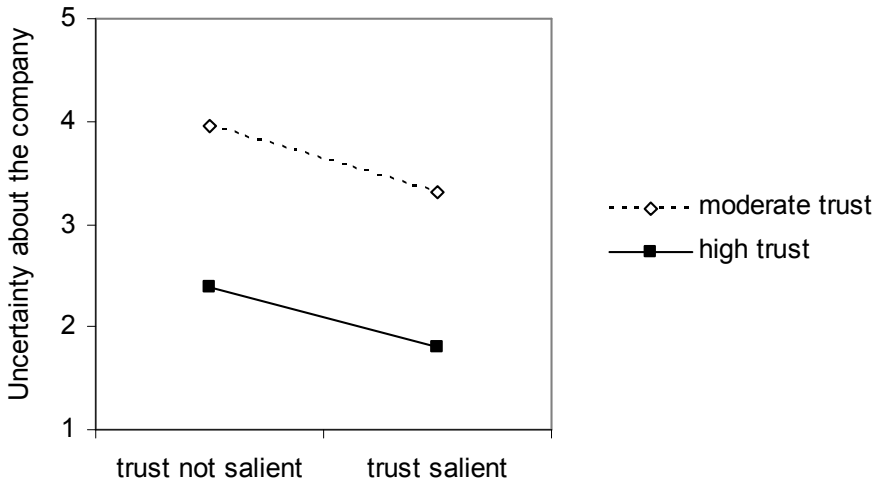

Figure 5. Mean ratings of uncertainty about the company as a function of salience of trust (trust not salient vs. trust salient) and level of trust (moderate trust, 1 *SD* below the mean, and high trust, 1 *SD* above the mean) in Study 2. The scale ranged from 1 to 7; higher values represent higher levels of uncertainty.

3.1.2.3 Discussion

Study 2 provides further support for the assumption that trust-related information can serve as a means of reducing uncertainty. In particular, it was demonstrated that the

mere salience of trust decreased individuals' uncertainty. When trust was made salient in the questionnaire by asking questions about the company's trustworthiness prior to asking questions related to uncertainty, individuals felt less uncertain about the company than when trust was not made salient. Trust in the company did not moderate this effect. Hence, the mere availability of information about the company's trustworthiness decreased uncertainty, independent of the absolute level of trust.

Results further indicate that individuals who rated the organization as highly trustworthy felt less uncertain about the company than individuals who rated the organization as moderately trustworthy. In other words, the higher the level of trust, the lower the level of uncertainty. Thus, high trust seems to have a higher potential to reduce uncertainty than moderate trust.

Study 2 was conducted in a field setting with job applicants, and it can thus be assumed that uncertainty in this study was personally involving. Hence, trust seems to provide a means for uncertainty management not only in the laboratory, but also in real life situations when uncertainty is a personally unsettling state with which individuals have to cope.

Note that, due to the setting and respondents, only moderate to high levels, but not low levels of trust were investigated here. Study 3 will address the question whether distrust also has the potential to reduce uncertainty.

3.1.3 Study 3

Study 1 and 2 showed that uncertainty can be decreased by high levels of trust. As noted above, it may be speculated that not only high levels of trust, but also low levels of trust or distrust can decrease uncertainty (e.g., Lewicki et al., 1998; Lewis & Weigert, 1985; Luhmann, 1968). Just as trust can signal good relationship quality, distrust can signal poor relationship quality. This can for example help decide not to

invest in a relationship or not to cooperate with another person, thereby potentially also decreasing feelings of uncertainty. Study 3 tested this possibility in a laboratory experiment in which trust and distrust were experimentally manipulated in a trust game (Berg, Dickhaut, & McCabe, 1995).

Furthermore, Study 3 addressed an issue that remained open from Study 1. Recall that in Study 1 participants who were informed that the company was trustworthy were less uncertain than participants who had no information about the company's trustworthiness. In was concluded that trust reduces uncertainty. One possible alternative explanation for the results is that not trust information in particular leads to a reduction of uncertainty, but in fact any type of information. In Study 1, trust information may have decreased feelings of uncertainty because it was the only information available, and not because trust information has specific characteristics that lead to uncertainty reduction. To rule out this possibility, Study 3 employed a different control condition than Study 1. Instead of giving participants no information, participants were asked to think about neutral, relationship-irrelevant information (namely about the trust game they were to play).

3.1.3.1 Method

Participants and design. Eighty-nine students of the University of Mannheim took part in an experiment called 'Study on Decision Making' in return for 1 Euro and a chocolate bar. Forty-eight per cent of participants were female, the average age was 21.42 years (*SD* = 2.67). The average time they had been studying was 3.30 semesters (*SD* = 2.87). Participants were randomly assigned to a 1-factorial (neutral condition vs. trust vs. distrust) between subjects design.

Experimental procedure. When coming to the laboratory, participants were given paper-pencil materials, sat down at separate tables, and signed an informed

consent form. Participants were told that the compensation for participating in this study was fixed (1 Euro and a chocolate bar). They then read the rules of the trust game (see Appendix C for the exact wording of the instructions and the explanation of the game). The trust game (Berg et al., 1995) is an economic game with two players, player A (the trustor or the sender) and player B (the trustee or the receiver). Player A receives a specific amount of money (here: 10 Euro) and can decide how much, if any, money s/he wants to send to player B. The money player B receives is then typically multiplied by a certain factor (here: by four) to encourage Player B to return some of the money to Player A. Player B then decides how much, if any, money s/he wants to send back to player A. The amount of money player A sends to player B indicates how much player A trusts player B. In this study a hypothetical trust game was played in order to reduce the costs for the otherwise costly game. Specifically, participants were asked to imagine playing the game. Moreover, since only the behavior of player A is interesting for the present purpose, all participants were told to imagine being senders.

Trust in the receiver was then manipulated. After this, the manipulation check of trust and the dependent variables (uncertainty in the game and uncertainty regarding the receiver) were measured. At the end, participants answered demographic questions, were thanked for their participation, paid, and debriefed.

IV1: Trust manipulation. Participants in the trust condition [distrust condition in brackets] were asked to write down why one should trust [distrust] the receiver in the game. Participants in the neutral condition were asked to write down what they thought of the game.

Manipulation check trust. Participants' trust in the receiver was measured with seven items. Four items closely resembled items from the trust scale by Robinson (1996), namely "I think that the receiver is an honest person", "I think the receiver is truthful", "I believe the receiver's intentions are good", and "I am not sure I would fully

trust the receiver" (reversed). The three remaining items read "I would trust the receiver", "I believe I can count on the receiver", and "I find it rather risky to trust the receiver" (reversed) (1, *strongly disagree,* 7, *strongly agree*). Items were combined to a single score of trust (Cronbach's α = .89).

DV1: Uncertainty during the game. Two items were used to assess participants' uncertainty during the trust game, reading "The game would unsettle me" and "In this situation I would feel secure" (reversed) (1, *strongly disagree,* 7, *strongly agree*). Items were combined to a single index (Cronbach's α = .84).

DV2: Uncertainty regarding the receiver. Participants' uncertainty with respect to the receiver was measured with two items, namely "I am uncertain how the receiver would behave" and "I am not fully sure how I should evaluate the receiver in this game" (1, *strongly disagree,* 7, *strongly agree*). Items were combined to a single score (Cronbach's α = .71).

3.1.3.2 Results

Manipulation check trust. The trust score was entered into a one-factorial analysis of variance (neutral condition vs. distrust vs. trust), resulting in a significant main effect of condition, $F(2, 86) = 7.15$, $p < .001$, $\eta^2 = .14$. Planned contrast analyses revealed that participants in the trust condition rated the receiver as more trustworthy ($M = 4.62$, $SD = 1.10$) than participants in the distrust condition ($M = 3.58$, $SD = 1.21$), $t(86) = 3.56$, $p < .001$ (one-tailed), Cohen's $d = .90$, and the neutral condition ($M = 3.78$, $SD = 1.02$), $t(86) = 2.90$, $p = .002$ (one-tailed), Cohen's $d = .79$. Participants in the distrust condition rated the receiver by trend as less trustworthy ($M = 3.58$, $SD = 1.21$) than participants in the neutral condition ($M = 3.78$, $SD = 1.02$), although this difference was not significant, $|t| < 1$.

Uncertainty during the game. A one-factorial analysis of variance (neutral condition vs. distrust vs. trust) was conducted with uncertainty in the game as dependent variable. The main effect of condition did not reach conditional levels of significance, $F(2, 86) = 2.17$, $p = .12$, $\eta^2 = .05$. However, as predicted, planned contrast analyses indicated that participants in the trust condition ($M = 4.14$, $SD = 1.74$) felt less uncertain during the game than participants in the neutral condition ($M = 4.87$, $SD = 1.24$), $t(86) = 1.82$, $p = .04$ (one-tailed), Cohen's $d = .48$. Similarly, participants in the distrust condition ($M = 4.16$, $SD = 1.67$) felt less uncertain during the game than participants in the neutral condition, $t(86) = 1.77$, $p = .04$ (one-tailed), Cohen's $d = .48$. Participants in the trust and in the distrust condition did not differ with respect to their uncertainty during the game, $|t| < 1$.

Uncertainty regarding the receiver. Uncertainty regarding the receiver was subjected to a one-factorial analysis of variance (neutral condition vs. distrust vs. trust), yielding a main effect of condition, $F(2, 86) = 5.91$, $p = .004$, $\eta^2 = .12$. As indicated by planned contrast analyses, participants in the trust condition ($M = 4.93$, $SD = 1.39$) felt less uncertain regarding the receiver in comparison to participants in the neutral condition ($M = 5.92$, $SD = 0.98$), $t(86) = 2.86$, $p = .003$ (one-tailed), Cohen's $d = .82$. Participants in the distrust condition ($M = 4.86$, $SD = 1.60$) also felt less uncertain with respect to the receiver than participants in the neutral condition, $t(86) = 3.06$, $p = .002$ (one-tailed), Cohen's $d = .80$. There was no difference in uncertainty regarding the receiver between participants in the trust and in the distrust condition, $|t| < 1$. Results are presented in Figure 6.

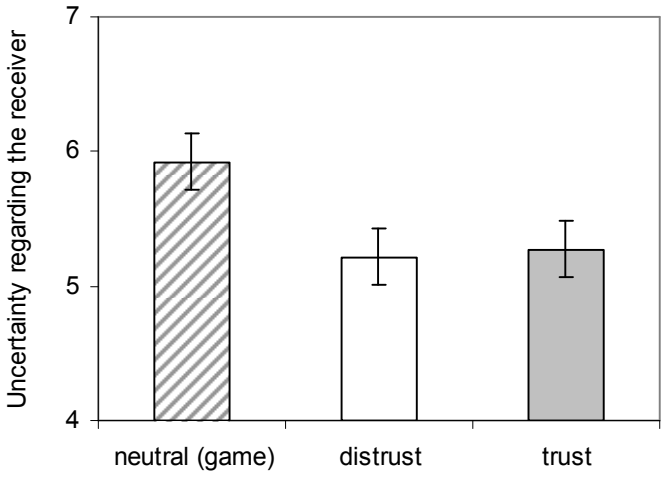

Figure 6. Mean ratings (and standard errors) of uncertainty regarding the receiver as a function of trust (neutral information vs. distrust vs. trust) in Study 3. The scale ranged from 1 to 7; higher values represent higher levels of uncertainty.

3.1.3.3 Discussion

Study 3 demonstrated that both trust and distrust can decrease uncertainty. Individuals who had thought about why they should trust or distrust the other person in the trust game felt less uncertain during the game and less uncertain with respect to the other person than individuals who had thought about the game. Thus, not only trust as such, but also distrust seems to be valuable and effective for uncertainty management. Presumably, this is because information about how trustworthy (or not trustworthy) a party is helps assess whether cooperation is indicated, how one will be treated in future interactions, or whether investing in a relationship is advisable, which is likely to decrease feelings of uncertainty.

Importantly, Study 3 employed a different control group than Study 1. In Study 1, participants who were informed that the company was trustworthy were less uncertain than participants in the control condition who had no information about the company. It was concluded that trust decreased uncertainty. However, it is also possible that

participants in the trust condition were less uncertain because they had *some* type of information available, and not because they were given information about the company's trustworthiness. Put differently, any type of information may have decreased participants' uncertainty, not trust in particular. Study 3 ruled out this alternative explanation by demonstrating that participants in the trust and distrust conditions felt less uncertain than participants who had thought about relationship-irrelevant information (the game). In this case, all participants had the same amount of information available and had all been asked to think of some aspects of the game. However, uncertainty was only low when participants had thought about trust-related issues but not when they had thought about relationship-irrelevant information. Thus, it can be concluded that not any type of information, but specifically information which is revealing about relationship quality, such as information about a party's trustworthiness, has the potential to reduce uncertainty. This will also be relevant for Hypothesis 3 (see Part C).

3.1.4 Summary of Part A

Part A tested the hypothesis that personal uncertainty can be reduced by means of trust-related information. Three studies consistently support this prediction. It was demonstrated that high trust per se (Study 1, 2, and 3), salience of trust (Study 2), and information about trustworthiness (trust and distrust; Study 3) decrease personal uncertainty. It may thus be concluded that trust-related information—that is, trust as such, the mere availability of this information, or positive and negative information about a party's trustworthiness—constitutes an effective means of managing personal uncertainty. Hence, hypothesis 1 was supported.

3.2 Part B: Personal uncertainty increases sensitivity to trust

Part A showed that trust-related information provides a means of making uncertainty manageable. This constitutes the precondition for Hypothesis 2. It was assumed that, because trust information helps cope with uncertainty, it becomes particularly important in uncertain conditions. When feeling personally uncertain individuals should therefore be especially attentive to trust-related information and should react more strongly to it. Hence, it was predicted that personal uncertainty increases individuals' sensitivity to trust (Hypothesis 2). This hypothesis will be tested in Part B.

3.2.1 Study 4

Study 4 was to test the hypothesis that personal uncertainty sensitizes individuals to trust information. A field study with job applicants was conducted to test this prediction. Specifically, it was hypothesized that individuals who feel uncertain during a selection procedure rely more strongly on their trust evaluations of the organization to form a subsequent judgment about the company compared to individuals who feel more certain during the selection procedure.

3.2.1.1 Method

Respondents. One hundred and seventeen job candidates who had applied to a job at a German aviation company completed the survey. The response rate was 31.3 per cent, which is common for online surveys (Cook et al., 2000). The average age was 29.16 years (SD = 8.89) and 56 per cent were female, which can be considered as representative of job applicants at this company.

Procedure. The procedure was similar to the procedure of Study 2 (for details, see Chapter 3.1.2.1). Applicants were invited to participate in an online study after they

had completed their registration. Respondents first answered questions pertaining to the status of their application. The independent variables (trust, uncertainty) and the dependent variable (organizational attraction) were then assessed. To circumvent the possibility that responses to the uncertainty scale influenced responses on the trust or the organizational attraction scale, trust and organizational attraction were measured first and uncertainty was measured last. At the end, respondents answered demographic questions, could comment on the survey and their contact with the company, were thanked for their participation, and were debriefed. In a lottery respondents could win a prize with a value of 50€.

Trust. As in Study 2, applicants' trust in the organization was measured with the seven-item trust scale by Robinson (1996). Items were averaged to a single score of trust (Cronbach's α = .70).

Uncertainty during the selection process. Applicants' uncertainty during the selection process was measured with five self-generated items, namely "I felt unsure when using the online application system," "During my contact with the company, all important information was available to me" (reversed), "Missing information made me feel uncertain during the online process," "The online application made me feel insecure," and "If more information had been available, I would have felt more certain when accomplishing the online application" (1, *strongly disagree,* 7, *strongly agree*). This type of uncertainty can be interpreted as informational uncertainty (uncertainty due to missing information), but also as self-uncertainty (feeling insecure, for example because one is not sure which actions are appropriate; see also Chapter 2.1.4 for the sometimes problematic distinction between informational uncertainty and other types of uncertainty). An exploratory factor analysis (principal component analysis, oblique rotation) yielded a one-factor solution with high factor loadings for all items (.69 to .85). Therefore, items were averaged to a single score of uncertainty (Cronbach's α = .84).

***Organizational Attraction*.** Applicants' attraction to the company was assessed via the organizational attraction scale by Highhouse, Lievens, and Sinar (2003). The scale is composed of three subscales with five items each, namely *general attractiveness* (e.g., "A job at the company is very appealing to me"), *intention to pursue* (e.g., "I would recommend this company to a friend looking for a job"), and *prestige* (e.g., "This company probably has a reputation as being an excellent employer"). Answers were given on 7-point Likert scales (1, *strongly disagree,* 7, *strongly agree*). Items were combined to a single score of organizational attraction (Cronbach's α = .94).

3.2.1.2 Results

Relationships Between Variables. The mean of uncertainty during the selection procedure was $M = 2.33$ ($SD = 1.19$), the mean of trust was $M = 5.82$ ($SD = 0.86$), and the mean or organizational attraction was $M = 6.32$ ($SD = 0.82$). Uncertainty about the selection procedure was negatively related to trust, $r = -.48$, $p < .001$, and negatively related to organizational attraction, $r = -.35$, $p < .001$. Trust and organizational attraction were positively correlated, $r = .58$, $p < .001$.

Test of Hypothesis 2. A hierarchical moderated regression analysis (Aiken & West, 1991) was conducted with organizational attraction as dependent variable. Table 6 (Appendix D) summarizes the results of the regression analysis. Trust and uncertainty during the selection process (both centered) were entered as predictors in Step 1 and the interaction term was entered in Step 2. The full model was significant, $R^2 = .39$, $F(1\ 113) = 24.45$, $p < .001$. Trust significantly predicted organizational attraction, $b = .50$, $t(113) = 6.25$, $p < .001$. Uncertainty was not a significant predictor, $b = -.02$, $|t| < 1$. Importantly, and in line with predictions, the interaction between trust and uncertainty during the selection process was significant, $b = .19$, $t(113) = 3.01$, $p = .003$, and incrementally explained five per cent of the variance.

To interpret this interaction effect, simple slopes of the relation between trust and organizational attraction for low and high uncertainty during the selection procedure were analyzed. For individuals who felt certain during the selection process (1 *SD* below the mean), the relationship between trust and organizational attraction was positive, $b = .28$, $t(113) = 2.47$, $p = .015$. For individuals who felt uncertain during the selection process (1 *SD* above the mean), the relationship was also positive but more pronounced, $b = .73$, $t(113) = 6.82$, $p < .001$. The difference between the simple slopes was significant, $t(113) = 3.02$, $p < .001$. Hence, when uncertainty during the selection procedure was high the relationship between trust and organizational attraction was stronger than when uncertainty during the selection procedure was low. In other words, individuals who felt uncertain were more sensitive to trust than individuals who felt less certain. Results are displayed in Figure 7.[9]

[9] To fully analyze the interaction between trust and uncertainty, simple slopes of the relationship between uncertainty during the selection procedure and organizational attraction for low and high trust were also analyzed. When trust was low (1 *SD* below the mean), the simple slope was negative, $b = -.18$, $t(113) = -2.61$, $p = .01$, which means that when trust was low, individuals who felt uncertain evaluated the organization as less attractive than individuals who felt more certain. When trust was high (1 *SD* above the mean), the simple slope was not significant, $b = .14$, $t(113) = 1.59$, $p = .115$. By trend, however, the simple slope was positive which means that individuals who felt uncertain evaluated the organization by trend as more attractive than individuals who felt certain. In sum, uncertainty increased individuals' sensitivity to trust, particularly when trust was low.

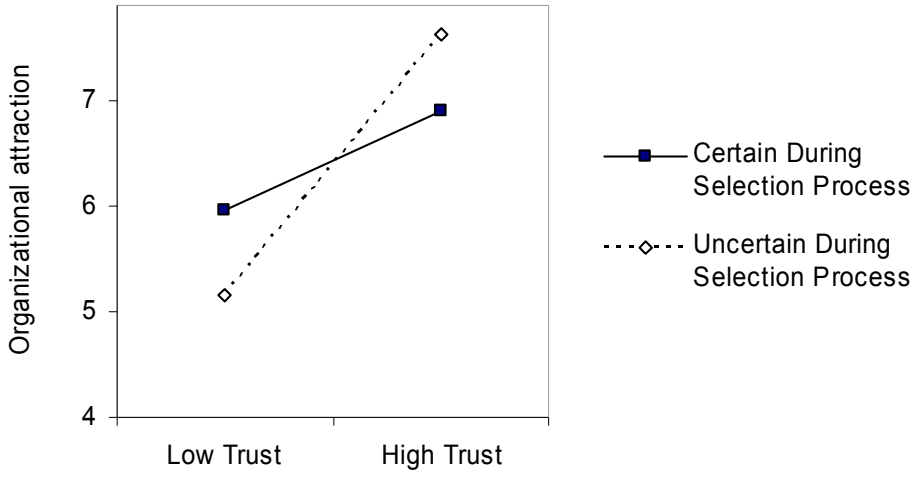

Figure 7. Mean ratings of organizational attraction as a function of trust (1 *SD* below and above the mean) and uncertainty during the selection process (1 *SD* below and above the mean) in Study 4. The scale ranged from 1 to 7, higher values represent higher organizational attraction.

3.2.1.3 Discussion

Study 4 showed that individuals who felt uncertain during a selection procedure relied more strongly on their trust judgment to evaluate the attractiveness of the organization than individuals who felt certain during the selection procedure. This provides support for the hypothesis that uncertainty increases individuals' sensitivity to trust-related information.

Note that Study 4 was correlational in nature, and all independent variables were measured instead of being manipulated. Inferences about the causal direction of the sensitizing effect of uncertainty to trust are therefore unwarranted. Study 5 and Study 9 will employ experimental designs to provide evidence for the causal nature of the reported effect.

Study 4 investigated the effect of uncertainty induced by the situation, namely a selection procedure. One might argue that uncertainty makes individuals more sensitive to trust only when trust and uncertainty are conceptually related in a specific situation,

and only if a specific type of trust has the potential to reduce a corresponding, specific type of uncertainty. In the case of Study 4, knowledge about the company's trustworthiness may have served as important information that directly helped deal with uncertainty during the company's selection procedure. Hence, both trust and uncertainty pertained to characteristics of the company. However, I propose that the sensitizing effect of uncertainty is more general and also holds when trust and uncertainty are not in a direct conceptual relation. The underlying assumption is that trust information provides a means of managing uncertainty on a global level. I therefore assume that trust information also helps individuals cope with chronic or dispositional forms of personal uncertainty and that those kinds of personal uncertainty also increase sensitivity to trust. This will be explored in Part D.

3.3 Part C: Personal uncertainty does not increase sensitivity to relationship-irrelevant information

Study 4 demonstrated that individuals are particularly sensitive to trust, that is, to relationship-relevant information when they feel uncertain. As outlined in Chapter 2.5.3, I propose that the sensitizing effect of uncertainty is not a general effect of increased information processing under uncertainty, such that individuals who feel uncertain process any type of judgment-relevant information in greater detail and integrate it more strongly in their judgments. Rather, I suggest that the sensitizing effect of uncertainty is specific to relationship-relevant information, that is, for information that may be helpful for uncertainty resolution. I therefore predicted that personal uncertainty does not increase individuals' sensitivity to relationship-irrelevant (but judgment-relevant) information (Hypothesis 3). The main goal of part C was to test this prediction.

3.3.1 Study 5

The aims of Study 5 were twofold. First, Study 5 tested the hypothesis that uncertainty does not sensitize individuals to relationship-irrelevant information (Hypothesis 3). Second, so far only correlational evidence from Study 4 supports the prediction that uncertainty sensitizes individuals to trust-related information (Hypothesis 2). Study 5 was to experimentally replicate this finding to provide causal evidence for the effect.

Relationship-irrelevant information. In the context of applicants' reactions, many types of information an applicant has about a company are indicative of the relationship between the applicant and his or her potential future employer. Even information seemingly unrelated to relationship quality, such as the size of the company, business volume, or salary paid to employees, can be used to draw inferences about the relationship with the company, for example whether one can rely on the company in the future (e.g., to secure one's job) or whether one's work is valued by the company. For the purpose of this study, a type of information was sought out that did not make any statement about, for example, whether the company was a good or a poor employer, what kind of intentions the company had towards the applicant, or whether future interactions would be beneficial or unfavorable. At the same time, however, the information had to be relevant for the judgment how attractive it would be to work for the company (judgment-relevant information). If the information was completely unimportant for the decision it would not be surprising if individuals did not integrate the information in their judgment.

The type of information chosen for this purpose was the location of the company, namely whether the location was attractive or unattractive. This information is relevant for the decision to move to that location in order to work for the company, but it

is not indicative of the relationship between the company and the applicant, that is, it is not relationship-relevant. Study 5 tested the hypothesis that personal uncertainty does not increase individuals' responsiveness to relationship-irrelevant information, namely the information whether the location of a company is attractive or unattractive (Hypothesis 3). Furthermore, Study 5 experimentally tested the prediction that personal uncertainty increases individuals' responsiveness to relationship-relevant information, namely trust (Hypothesis 2), thus experimentally replicating the results from Study 4.

3.3.1.1 Method

Participants and design. One-hundred and six students of the University of Mannheim participated in an experiment labelled 'Evaluating an Organization' and received 1 Euro and a chocolate bar in return. Participants' average age was 23.31 years (*SD* = 2.46), 40 per cent were female, and they had been studying for 4.61 semesters (*SD* = 2.56) on average. Ninety-four per cent had applied for a job at least once before and the average number of applications was 7.36 (*SD* = 11.38), indicating that participants were familiar with application procedures. Participants were randomly assigned to a 2 (trustworthiness of the organization: low vs. high) x 2 (location of the company: unattractive vs. attractive) x 2 (salience: uncertainty vs. certainty) between subjects design.

Experimental procedure. When participants entered the laboratory, they were given a paper-pencil questionnaire, were seated at separate tables, and signed the informed consent form. First, salience of uncertainty versus certainty was manipulated. Positive and negative affect were then measured to control for potential mood effects. After this, trust in the company and the attractiveness of the company location were

manipulated.[10] The dependent variable organizational attraction was then measured, followed by manipulation checks for trust, company location, and uncertainty versus certainty salience. At the end, participants answered demographic questions. They were then thanked for participating in the study, paid, and debriefed.

IV1: Salience of uncertainty versus certainty. Personal uncertainty vs. certainty was made salient following a procedure introduced by Van den Bos (2001a). Participants in the uncertainty salient condition [certainty salient condition in brackets] were asked to imagine being uncertain [certain] and to respond to the following two questions: (a) "Please briefly describe the emotions that the thought of your being uncertain [certain] arouses in you" and (b) "Please write down, as specifically as you can, what you think will physically happen to you as you feel uncertain [certain]."

Positive and negative affect. All participants completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). This questionnaire was included to check whether the manipulation of uncertainty versus certainty salience elicited positive or negative mood. The PANAS comprises two subsets of 10 items each. One subset assesses positive affect (PA; e.g., interested, excited), the other assesses negative affect (NA; e.g., ashamed, afraid). Participants indicated to what extent they felt, for example, interested at the moment (1, *strongly disagree*, 7, *strongly agree*). The subsets were averaged to scores of positive affect (Cronbach's $\alpha = .75$) and negative affect (Cronbach's $\alpha = .77$).

IV2: Trust manipulation. Participants read an application scenario similar to that of Study 1. They were asked to imagine that they had applied for a job at the

[10] The order in which trust and company location were manipulated was counterbalanced across conditions to rule out the possibility of order effects. The order of the manipulations did not influence the results and will therefore not be reported in the following analyses.

company Salis Alba and that they had been invited to the company's selection procedure. The scenario continued as follows:

> *In order to prepare for the selection procedure, you are searching the internet for information about the company. During your search you find a website with evaluations of companies. On this website there is a forum with statements about Salis Alba by employees and former applicants.*

The company's trustworthiness was manipulated on the three dimensions ability, benevolence, and integrity (Mayer et al., 1995). Participants in the high trustworthiness condition read the following statements [low trustworthiness condition in brackets]:

> *I assume that Salis Alba treats [doesn't treat] its employees very well* (benevolence); *I cannot [can] imagine that Salis Alba would take advantage of somebody* (benevolence); *I [don't] think Salis Alba is very competent* (ability); *In my opinion Salis Alba has [does not have] a lot of know how* (ability); *I [don't] think that Salis Alba lives up to its promises* (integrity); *I would say that the principles of Salis Alba are [not] well compatible with my own principles* (integrity).[11]

IV3: Company location manipulation. The company location was to be manipulated analogous to the trustworthiness of the company so that both kinds of information were similar in informational value. Therefore, six statements were developed that conjointly reflected either an unattractive or an attractive location. Participants read the following:

> *The location of Salis Alba is about 300 kilometres away from where you live at the moment. This means that you would have to move if you worked for Salis*

[11] The dimensions (benevolence, ability, integrity) were not revealed to participants, but were added here to clarify which statement represents which dimension.

Alba. You gather information on the internet about the place where Salis Alba is located. In a forum you find the following information about the City.

Participants in the unattractive location condition read:

The prices for flats are relatively high; The city is an industrial city; Cafés and restaurants are scarce; The nightlife is rather quiet; The cultural opportunities the city offers are limited; A satellite picture shows that there are a lot of motorways.

Participants in the attractive location condition read:

The prices for flats are relatively low; The city has a beautiful old town; There are many Cafés and restaurants; The city has an active nightlife; The city offers a large variety of cultural opportunities; A satellite picture shows that there are a lot of parks.

DV: Organizational attraction. As in Study 4, participants' attraction to Salis Alba as a potential employer was assessed via the organizational attraction scale by Highhouse and colleagues (2003). Items were combined to form a single score of organizational attraction (Cronbach's α = .95).

Manipulation check trust. One item was used to measure participants' perceived trustworthiness of the company, reading "I trust Salis Alba" (1, *strongly disagree,* 7, *strongly agree*).

Manipulation check company location. Participants' evaluations of the attractiveness of the company location were measured with one item, namely "I find the location of the company attractive" (1, *strongly disagree,* 7, *strongly agree*).

Manipulation check uncertainty versus certainty salience. Participants were asked to think about the task at the beginning when they had to write down how they feel when they are uncertain [certain]. They were asked how much they had thought about uncertainty or certainty (0, *I thought about uncertainty,* 10, *I thought about certainty*).

3.3.1.2 Results

Manipulation check trust. The trust item was subjected to a 2 (trust) x 2 (company location) x 2 (salience) analysis of variance. As expected, participants in the low trust condition (M = 2.31, SD = 1.36) rated the company as less trustworthy than participants in the high trust condition (M = 3.53, SD = 1.29), $F(1, 94) = 24.21$, $p < .001$, $\eta^2 = .21$.[12] All other main effects and interactions were not significant, all Fs < 3.76, ps > .056[13], η^2s < .04. Hence, trust was successfully manipulated.

Manipulation check company location. A 2 (trust) x 2 (company location) x 2 (salience) analysis of variance on company location revealed a main effect of company location, $F(1, 98) = 169.05$, $p < .001$, $\eta^2 = .63$. Participants in the location unattractive condition (M = 2.24, SD = 1.24) evaluated the location as less attractive than participants in the location attractive condition (M = 5.52, SD = 1.31), suggesting a successful manipulation of the attractiveness of the company location. All other main and interaction effects were not significant, all Fs < 1.

Manipulation check uncertainty versus certainty salience. The salience manipulation check ratings were entered into a 2 (trust) x 2 (company location) x 2 (salience) analysis of variance. As suggested, participants in the uncertainty salience condition had thought more of uncertainty (M = 4.85, SD = 2.68), while participants in the certainty salience condition had thought more of certainty (M = 5.61, SD = 2.61).

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[12] Four participants did not answer the trust item. The N for this analysis was therefore 102.

[13] The interaction between company location and uncertainty salience was marginally significant at an α-level of .10, $F(1, 94) = 3.76$, $p = .056$, $\eta^2 = .04$. When certainty was salient, evaluations of the company's trustworthiness did not differ between participants in the unattractive location condition (M = 3.04, SD = 1.57) and participants in the attractive location condition (M = 3.20, SD = 1.44), $F < 1$. When uncertainty was salient, participants evaluated the company by trend as more trustworthy when they were in the unattractive location condition (M = 3.08, SD = 1.44) than when they were in the attractive location condition (M = 2.38, SD = 1.30), but this effect did not meet conventional levels of significance, $F = 3.00$, $p = .086$, $\eta^2 = .03$.

Although this effect did not meet conventional levels of significance, $F(1, 98) = 2.10$, $p = .150$, $\eta^2 = .02$, the salience manipulation was in the intended direction (but see Chapter 3.3.3 for a discussion of this issue). All other main or interaction effects were not significant, all Fs < 3.68, ps > .058[14], η^2s < .04.

Positive and negative affect. First, a 2 (trust) x 2 (company location) x 2 (salience) analysis of variance on the *positive affect* subscale of the PANAS revealed a significant interaction between trust and company location, $F(1, 98) = 6.98$, $p = .01$, $\eta^2 = .07$. In the low trust condition, participants in the unattractive location condition ($M = 2.97$, $SD = 0.52$) and participants in the attractive location condition ($M = 2.81$, $SD = 0.59$) did not differ in positive affect, $F(1, 102) = 1.13$, $p = .290$, $\eta^2 = .01$. In the high trust condition, the positive affect of participants in the unattractive location condition ($M = 2.66$, $SD = 0.58$) was lower than the positive affect of participants in the attractive location condition ($M = 3.10$, $SD = 0.53$), $F(1, 102) = 7.90$, $p = .006$, $\eta^2 = .07$. All other effects were not significant, all Fs < 1.80, ps > .183, η^2s < .02. Second, the *negative affect* subscale of the PANAS was subjected to a 2 (trust) x 2 (company location) x 2 (salience) analysis of variance. None of the main or interaction effects were significant, all Fs < 1. Importantly, the manipulation of uncertainty versus certainty salience neither influenced positive affect nor negative affect. The effects reported below can therefore not be attributed to differences in positive or negative mood.

Organizational attraction. Means and standard deviations of organizational attraction are displayed in Table 1.

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[14] The main effect of company location was marginally significant at an α-level of .10, $F(1, 98) = 3.68$, $p = .058$, $\eta^2 = .04$. By trend, participants in the unattractive location condition indicated that they had thought more of uncertainty ($M = 4.75$, $SD = 2.63$), while participants in the attractive location condition indicated that they had thought more of certainty ($M = 5.71$, $SD = 2.63$).

Table 1. Means and standard deviations of organizational attraction as a function of trust, attractiveness of comany location, and salience of uncertainty versus certainty (Study 5).

		Uncertainty Salient		Certainty Salient	
		M	*SD*	*M*	*SD*
Unattractive Location	Low Trust	2.54	0.62	3.18	1.45
	High Trust	4.54	0.71	4.13	1.17
Attractive Location	Low Trust	2.97	1.04	3.80	1.15
	High Trust	4.70	1.08	4.94	0.57

Note. The scale ranged from 1 to 7, higher values represent higher organizational attraction.

In the following analysis of variance (and supplementary analyses), two hypotheses will be investigated. First, Hypothesis 2 will be examined, stating that uncertainty increases sensitivity to relationship-relevant information (trust). Second, Hypothesis 3 will be tested, holding that uncertainty does not increase sensitivity to relationship-irrelevant information (company location).

Participants' ratings of the organizations' attractiveness as a potential employer were entered into a 2 (trust) x 2 (company location) x 2 (salience) analysis of variance. The main effect of trust was significant, $F(1, 98) = 54.26$, $p < .001$, $\eta^2 = .36$. Participants in the low trust condition evaluated the company as less attractive ($M = 3.12$, $SD = 1.16$) than participants in the high trust condition ($M = 4.57$, $SD = 0.95$). The main effect of company location was also significant, $F(1, 98) = 6.60$, $p = .012$, $\eta^2 = .06$. Participants in the location unattractive condition rated the organization as less attractive ($M = 3.56$, $SD = 1.29$) than participants in the location attractive condition ($M = 4.12$, $SD = 1.24$).

Test of Hypothesis 2. Importantly, and in line with predictions, the interaction between trust and salience was significant, $F(1, 98) = 4.31$, $p = .041$, $\eta^2 = .04$. Pairwise comparisons were conducted to interpret this interaction effect. In the certainty salient condition, participants in the low trust condition rated the company as less attractive

(M = 3.50, SD = 1.32) than participants in the high trust condition (M = 4.52, SD = 1.01), $F(1, 102) = 12.57$, $p < .001$, $\eta^2 = .11$. In the uncertainty salient condition, participants in the low trust condition also rated the company as less attractive (M = 2.73, SD = 0.85) than participants in the high trust condition (M = 4.63, SD = 0.91), $F(1, 102) = 45.24$, $p < .001$, $\eta^2 = .31$. Importantly, however, the effect of the trust manipulation on organizational attraction was more pronounced in the uncertainty salient condition than in the certainty salient condition $z = -1.78$, $p = .018$ (one-tailed). Hence, uncertainty salience increased participants' responsiveness to trust-related information. Results are presented in Figure 8.[15]

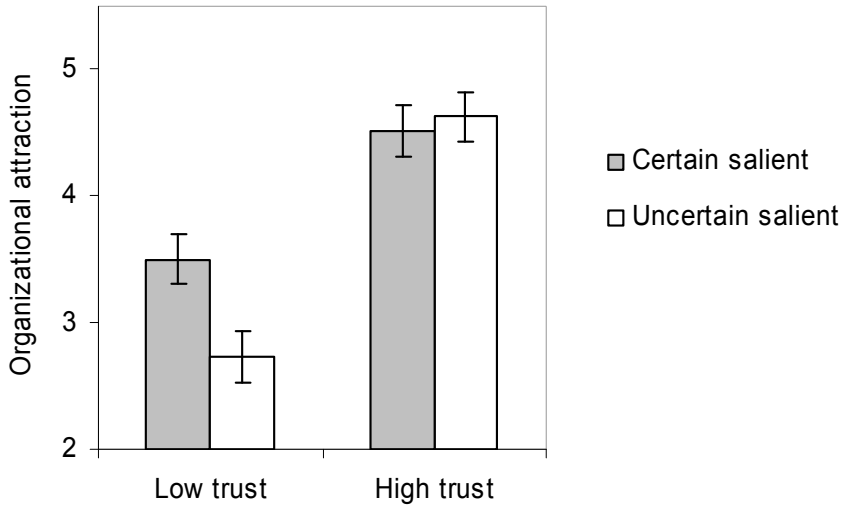

Figure 8. Mean ratings (and standard errors) of organizational attraction as a function of trust (low versus high) and salience (uncertainty versus certainty) in Study 5. The scale ranged from 1 to 7, higher values represent higher organizational attraction.

[15] Further analyses showed that in the low trust condition, participants in the uncertainty salient condition rated the company as less attractive than participants in the certainty salient condition, $F(1, 102) = 7.43$, $p = .008$, $\eta^2 = .07$. In the high trust condition, the difference between the uncertainty and the certainty salient condition was not significant, $F < 1$. Thus, uncertainty salience increased participants' responsiveness to trust-information particularly in the high trust condition.

Test of Hypothesis 3. Note that the hypothesis that uncertainty *does not* increase sensitivity to relationship-irrelevant information is empirically supported when H_0 (the null-hypothesis, holding that the sensitizing effect does not exist) is accepted and H_1 (the alternative hypothesis, holding that the sensitizing effect exists) is rejected. To decrease the probability of committing a Type II error (i.e., accepting H_0 while H_0 is not true; that is, not detecting an effect although the effect exists), the value of α (the probability of making a Type I error, i.e. rejecting H_0 while H_0 is true) for this particular hypothesis was increased to .10. Thus, in this specific case H_0 was rejected at an α-level of .10 instead of .05.

Importantly, in line with predictions, the interaction between location and salience in the reported ANOVA was not significant at an α-level of .10, $F(1, 102) = 1.13$, $p = .290$ $\eta^2 = .01$. Thus, uncertainty salience did not increase participants' sensitivity to information about the company location. Although the interaction between company location and salience was—as predicted—not significant, looking at the means in the respective experimental groups can be revealing about the general pattern of results. When certainty was salient, participants in the unattractive location condition were by trend less attracted to the company ($M = 3.65$, $SD = 1.38$) than participants in the attractive location condition ($M = 4.33$, $SD = 1.08$), $F(1, 102) = 3.71$, $p = .057$, $\eta^2 = .04$. When uncertainty was salient, participants in the unattractive location condition were also less attracted to the company ($M = 3.47$, $SD = 1.21$) than participants in the attractive location condition ($M = 3.90$, $SD = 1.37$), but this effect was not significant, $F(1, 102) = 1.60$, $p = .208$, $\eta^2 = .02$. Hence, participants who were made uncertain reacted by trend *less* strongly to information about the company location than participants who were made certain. Figure 9 illustrates these results.

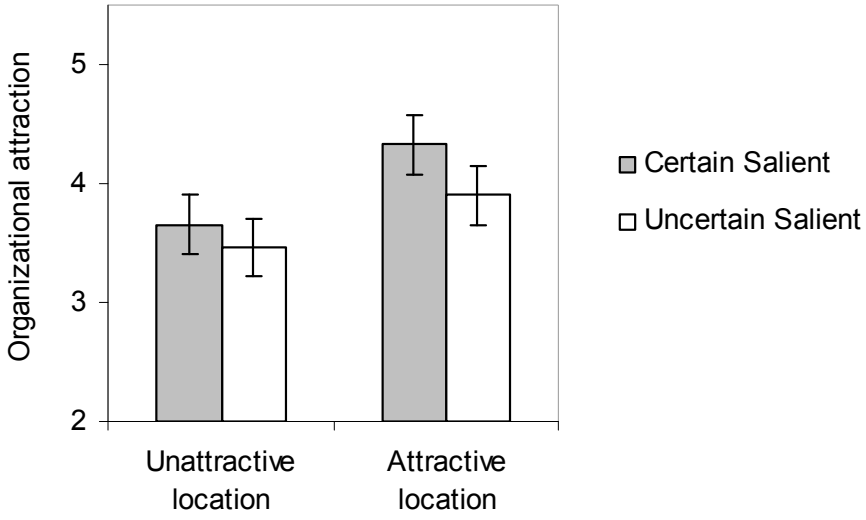

Figure 9. Mean ratings (and standard errors) of organizational attraction as a function of company location (unattractive versus attractive) and salience (uncertainty versus certainty) in Study 5. The scale ranged from 1 to 7, higher values represent higher organizational attraction.

In the reported ANOVA, all other effects (the main effect of salience; the 2-way interaction between trust and company location; the 2-way interaction between company location and salience; and the 3-way interaction between trust, company location, and salience) were not significant, all Fs < 2.65, ps > .107, η^2s < .03.

3.3.1.3 Discussion

Employing an experimental design, Study 5 provides causal evidence for the hypothesis that uncertainty sensitizes individuals to trust-related information. When personal uncertainty had been made salient, participants integrated information about an organization's trustworthiness more strongly in their judgment about the attractiveness of the organization than when personal certainty had been made salient.

Furthermore, the sensitizing effect of uncertainty seems not to be restricted to situations where uncertainty and trust are in a direct conceptual relation (as in Study 4), but also emerges when the constructs are not conceptually linked. Although trust in the

organization was not conceptually related to the experimentally induced personal uncertainty, individuals who felt uncertain about themselves were more responsive to information about the organization's trustworthiness. Hence, the sensitizing effect of uncertainty seems to apply to a range of different uncertainty constructs that are not necessarily conceptually related to the available trust information.

Importantly, uncertainty increased sensitivity only to trust information, but not to relationship-irrelevant information. Specifically, when uncertainty had been made salient participants *did not* rely more strongly on information about the company location to form a judgment about the organization's attractiveness than when certainty had been made salient. This means that the sensitizing effect of uncertainty seems to be specific to relationship-relevant information (here: trust) and does not seem to generalize to relationship-irrelevant information. In fact, participants who had thought of uncertainty were by trend even *less* sensitive to relationship-irrelevant information than participants who had thought of certainty. This interesting pattern of results will be further examined in Study 6.

3.3.2 Study 6

In Study 5, both relationship-relevant information (trust) and relationship-irrelevant information (company location) were available to participants. It is possible (and likely) that when both types of information are available, individuals draw on the type of information that is most important for them. Based on the theoretical consideration that relationship-relevant information, such as trust, is particularly important when individuals feel uncertain (Chapter 2.4), it is perhaps not surprising that uncertain participants in Study 5 did not use relationship-irrelevant information in addition to relationship-relevant information. Relationship-irrelevant information would not increase individuals' knowledge about the quality of the relationship with the other

party, and thus it makes sense that this information is not used for judgment formation under conditions of uncertainty. Moreover, the main effect of trust in Study 5 was very strong and it may therefore have dominated a potential interaction effect between uncertainty and company location.

An interesting question that derives from these considerations is: What happens when only relationship-irrelevant information, but not relationship-relevant information, is available to participants? On the one hand, one could speculate that under such limited informational conditions uncertain individuals will use the only information available to them to form a judgment about the other party, be it revealing about the quality of the relationship or not. After all, some information is often better than none. On the other hand, one could also speculate that uncertain individuals are exclusively more responsive to types of information which help cope with uncertainty, such as information that is revealing about relationship quality. Hence, it is possible that uncertain individuals do not rely on relationship-irrelevant information to form a judgment about the other party because it is not useful in terms of uncertainty management—even though it may be the only information available at the time of judgment.

Study 6 tested the hypothesis that uncertainty does not increase individuals' sensitivity to relationship-irrelevant information (Hypothesis 3), even if this is the only information available at the time of judgment. The procedure of Study 6 was similar to that of Study 5. In contrast to Study 5, however, only relationship-irrelevant information (attractiveness of the company location) was given to participants in Study 6, but not relationship-relevant information (trust).

3.3.2.1 Method

Participants and design. Eighty-one students of the University of Mannheim took part in an experiment called 'Evaluating an Organization' for which they received

1 Euro and a chocolate bar. Participants were 24.12 years on average (*SD* = 2.67), 26 per cent of participants were female. The average time they had been studying was 4.59 semesters (*SD* = 3.02). Application procedures were familiar to participants. Ninety-two per cent had applied for a job at least once before, the average number of applications was 5.90 (*SD* = 6.72). Participants were randomly assigned to a 2 (location of the company: unattractive vs. attractive) x 2 (salience: uncertainty vs. certainty) between subjects design.

Experimental procedure. When coming to the laboratory, participants received a paper-pencil questionnaire, were seated at separate tables, and signed the informed consent form. First, salience of uncertainty versus certainty was manipulated and positive as well as negative affect were assessed. Subsequently, the attractiveness of the company location was manipulated before the dependent variable organizational attraction was measured. This was followed by manipulation checks for the company location and uncertainty versus certainty salience. At the end, participants answered demographic questions, were thanked for participating in the study, paid, and debriefed.

IV1: Salience of uncertainty versus certainty. Salience of uncertainty versus certainty was manipulated analogous to Study 5. Participants wrote down what emotions the thought of being uncertain [certain] arouses in them and what physically happens when they feel uncertain [certain].

Positive and negative affect. Positive and negative affect were assessed via the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) to rule out the possibility that mood was affected by the salience manipulation. The subsets were averaged to indexes of positive affect (Cronbach's $\alpha = .79$) and negative affect (Cronbach's $\alpha = .84$).

IV2: Company location manipulation. Participants read the application scenario described in Study 5. Unattractiveness versus attractiveness of the company location was manipulated as in Study 5.

DV: Organizational attraction. The organizational attraction scale by Highhouse and colleagues (2003) employed previously was used to measure participants' attraction to Salis Alba as a potential employer. Items were combined to form a single score of organizational attraction (Cronbach's α = .92).

Manipulation check company location. One item was used to assess participants' perceived attractiveness of the company location, namely "I find the location of the company attractive" (1, *strongly disagree,* 7, *strongly agree*).

Manipulation check uncertainty versus certainty salience. Participants indicated how much they had thought about uncertainty or certainty when writing down what happens when they feel uncertain [certain] (0, *I thought about uncertainty,* 10, *I thought about certainty*).

3.3.2.2 Results

Manipulation check company location. A 2 (company location) x 2 (salience) analysis of variance on the attractiveness of the company location revealed that participants in the unattractive location condition rated the company as less attractive (M = 3.00, SD = 1.60) than participants in the attractive location condition (M = 5.68, SD = 1.21), $F(1, 77) = 71.52$, $p < .001$, $\eta^2 = .48$. All other effects were not significant, all Fs < 1.99, ps > .163, η^2s < .03. The manipulation of company location can thus be considered successful.

Manipulation check uncertainty versus certainty salience. The uncertainty manipulation check ratings were subjected to a 2 (company location) x 2 (salience) analysis of variance. As suggested, participants in the uncertainty salience condition

indicated that they had thought more of uncertainty (M = 4.88, SD = 2.95), while participants in the certainty salient condition indicated that they had thought more of certainty (M = 5.78, SD = 2.74). Although this main effect of salience did not meet conventional levels of significance, $F(1, 77) = 2.00$, $p = .162$, $\eta^2 = .03$, the manipulation of uncertainty versus certainty salience was in the intended direction (see Chapter 3.3.3 for a discussion of this issue). All other main and interaction effects were not significant, all Fs < 1.39, ps > .242, η^2s < .02.

Positive and negative affect. A 2 (company location) x 2 (salience) analysis of variance on the *positive affect* subscale of the PANAS revealed no significant main or interaction effects, all Fs < 2.63, ps > .109, η^2s < .03. Similarly, a 2 (company location) x 2 (salience) analysis of variance on the *negative affect* subscale of the PANAS revealed no significant main or interaction effects, all Fs < 1.05, ps > .308 η^2s < .01. Hence, participants in the uncertainty salient and the certainty salient condition neither differed in positive nor negative affect, and the results reported in the following therefore cannot be explained by different levels of positive or negative mood.

Organizational attraction. Participants' ratings of the company's attractiveness as potential employer were entered into a 2 (company location) x 2 (salience) analysis of variance. None of the main effects were significant, all Fs < 2.98, ps > .088, η^2s < .04.[16] Unexpectedly, the interaction between company location and salience was significant, $F(1, 77) = 4.82$, $p = .031$, $\eta^2 = .06$.[17] Pairwise comparisons revealed the following pattern

[16] The effect of the salience manipulation was marginally significant, $F(1, 77) = 2.98$, $p = .088$, $\eta^2 = .04$. Participants in the certainty salient condition rated the company by trend as less attractive (M = 4.21, SD = 0.16) than participants in the uncertainty salient condition (M = 4.59, SD = 0.15).

[17] As in Study 5, the H_0 for the prediction that uncertainty *does not* increase individuals' responsiveness to relationship-irrelevant information (Hypothesis 3) was rejected at an α-level of .10 instead of .05 in order to decrease the probability of a Type II error (see Study 5 for a more detailed rationale for this approach).

of results. When certainty was made salient, participants in the unattractive location condition rated the company as less attractive (M = 3.80, SD = 0.84) than participants in the attractive location condition (M = 4.61, SD = 1.21), $F(1, 77) = 6.61$, $p = .012$, $\eta^2 = .08$. Notably, when uncertainty was made salient, participants in the unattractive location condition (M = 4.66, SD = 0.98) rated the company as *equally* attractive as participants in the attractive location condition (M = 4.51, SD = 0.91), $F < 1$. Hence, participants in the certainty salient condition were responsive to information about the attractiveness of the company location, while participants in the uncertainty salient condition were unresponsive to this information. Figure 10 displays the results.[18]

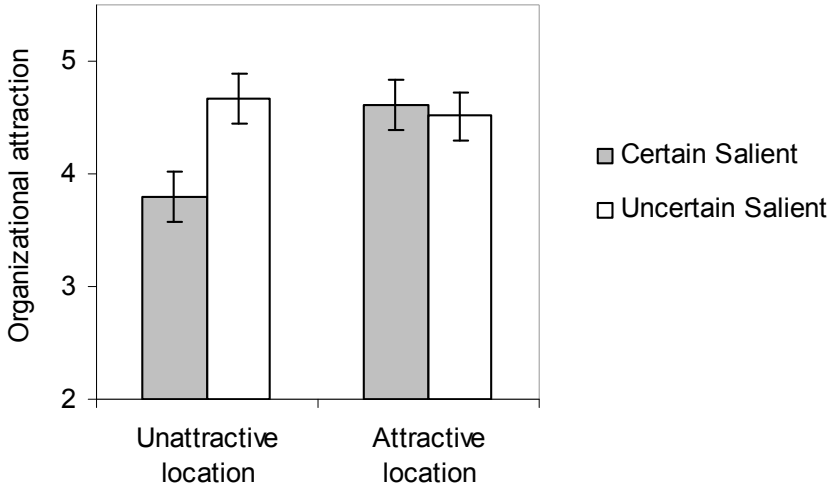

Figure 10. Mean ratings (and standard errors) of organizational attraction as a function of company location (unattractive versus attractive) and salience (uncertainty versus certainty) in Study 6. The scale ranged from 1 to 7, higher values represent higher organizational attraction.

[18] Further analyses showed that when the location was unattractive, participants in the uncertainty salient condition rated the company as more attractive than in the certainty salient condition, $F(1, 77) = 7.61$, $p = .007$, $\eta^2 = .09$. When the location was attractive, the difference between the uncertainty salient condition and the certainty salient condition was not significant, $F < 1$. Hence, participants in the uncertainty salient condition were particularly unresponsive to information about the company location in the unattractive location condition.

3.3.2.3 Discussion

Study 6 further supports the prediction that uncertainty does not increase individuals' sensitivity to relationship-irrelevant information. Specifically, individuals who were experimentally made uncertain about themselves did not react more strongly to information about the location of the company than individuals who were experimentally made certain about themselves. In fact, and somewhat surprisingly, uncertain individuals integrated information about the company location *less* in their judgment about the organization's attractiveness than individuals who felt certain. More precisely, individuals who felt certain rated the company as more attractive when the location was attractive, but rated the company as less attractive when the location was unattractive. By contrast, individuals who felt uncertain did not show such a relationship between company location and attractiveness of the organization, which means that they did not integrate the information about the location in their organizational attractiveness judgment. This was the case even though the (un)attractiveness of the company location was the only information available to them. Presumably, this is because relationship-irrelevant information (company location) is not revealing about relationship quality and does not help manage personal uncertainty. Uncertain individuals therefore did not consider this type of information as relevant and did not use it in their judgment.

Taken together, uncertainty *decreased* individuals' sensitivity to relationship-irrelevant information, rather than increasing it. Note that this result—namely, that uncertainty *desensitized* individuals to relationship-irrelevant information—is even stronger than the initial prediction that uncertainty does not increase sensitivity to relationship-irrelevant information (Hypothesis 3). Individuals who feel uncertain are not merely as responsive as individuals who feel certain, but in fact seem to be indifferent

with respect to information that is not revealing about the quality of the social relationship in question.

3.3.3 Summary of Part C

In sum, Studies 5 and 6 demonstrate that the sensitizing effect of personal uncertainty is not a general effect of increased information processing (e.g., Chaiken et al., 1989; Tiedens & Linton, 2001), but is specific to information that is revealing about the quality of social relationships, such as the trustworthiness of another party. Notably, individuals who felt uncertain were not just as sensitive to relationship-irrelevant information (the attractiveness of a company location) as individuals who felt certain, but were in fact less sensitive to this type of information. Thus, personal uncertainty seems to act as a catalyst that is specialized for information which may help manage uncertainty, such as relationship-relevant information.

It needs to be acknowledged that the manipulation check of uncertainty versus certainty salience was only significant on an α-level of .20 in Studies 5 and 6. Nonetheless, it is likely that certainty versus uncertainty salience was successfully manipulated for the following reasons. First, the circumstance that the effect on the manipulation check measure was weak does not necessarily mean that the uncertainty manipulation itself was weak, but can also have resulted from the fact that the manipulation check was assessed at the end of the studies. Possibly, the effect of the uncertainty manipulation decreased in the course of the studies and therefore did not elicit strong effects on the manipulation check. Second, the manipulation check of uncertainty versus certainty salience always showed a trend in the expected direction, such that participants in the certainty salient condition indicated that they had thought more of certainty, while participants in the uncertainty condition indicated that they had thought more of uncertainty. Third, the manipulation of uncertainty versus certainty

salience has successfully been employed in other studies (e.g., Van den Bos, 2001a) and constitutes a well established uncertainty manipulation. Fourth, it is possible that the uncertainty manipulation was indeed weak. A weak manipulation is potentially problematic because it may fail to elicit the proposed effects. At the same time, however, it represents a conservative test of the hypothesis since effects are less likely to be detected (cf. Cohen et al., 2003). The fact that the reported effects on the dependent variables reached statistical significance despite a potentially weak manipulation of uncertainty speaks to the strength of the sensitizing effect of uncertainty to trust (Study 5), as well as the desensitizing effect of uncertainty to relationship-irrelevant information (Study 6).

3.4 Part D: Uncertainty, trust, and procedural fairness

Past reserach has shown that uncertainty increases sensitivity to procedural fairness (e.g., Van den Bos & Lind, 2002). The underlying reasoning is that trust information helps deal with uncertainty, but since information about a party's trustworthiness is not always at hand fairness judgments can be used instead. However, trust judgments are often more comprehensive and involve more information about relationship quality than procedural fairness judgments (see Chapter 2.6). I therefore argue that when both procedural fairness and trust information are available, individuals are more responsive to trust rather than to procedural fairness under conditions of uncertainty (Hypothesis 5). A main goal of the current chapter was to explore this possibility. Furthermore, the prediction that individuals are more sensitive to trust-related information when feeling uncertain was to be further substantiated by showing that different types of uncertainty, including dispositional personal uncertainty, elicit the proposed effect.

3.4.1 Study 7

The goal of Study 7 was threefold. First, the study aimed at demonstrating that the sensitizing effect of uncertainty to trust is not specific to personal uncertainty induced by a specific situation (see Study 4) or experimentally induced uncertainty (Study 5), but can be generalized to other uncertainty constructs, such as chronic personal uncertainty. Specifically, it was examined whether *social comparison orientation* sensitizes individuals to trust. According to social comparison theory (Festinger, 1954), individuals who are uncertain of themselves are more strongly motivated to compare their opinions and abilities to others (see also Chapter 2.2.1). Based on this view, Gibbons and Buunk (1999) suggest that individuals who are uncertain about aspects of the self engage in social comparison processes because social comparison produces self-relevant information and thereby leads to a better understanding of the self. The authors propose that individuals high in social comparison orientation experience chronic uncertainty about themselves and are motivated to reduce uncertainty. Accordingly, social comparison orientation is positively related to anxiety and neuroticism, and negatively related to self-esteem (Gibbons & Buunk, 1999). Study 7 tested the hypothesis that individuals high in social comparison orientation (as a proxy for chronic personal uncertainty) are more sensitive to trust-related information than individuals low in social comparison orientation (Hypothesis 2).

Second, the interplay between trust, uncertainty, and procedural fairness was investigated. In the framework of the uncertainty management model, Thau and colleagues (2007) showed that high social comparison orientation strengthens the negative relationship between interactional fairness and antisocial work behavior, thus demonstrating that individuals high in social comparison orientation are more sensitive to interactional fairness (which can be conceived of representing a part of procedural

fairness). Based on the assumption that trust judgments are more comprehensive than fairness judgments, I propose that individuals who feel uncertain draw more strongly on trust-related information than on fairness-related information to cope with uncertainty. Thus, Study 7 tested the hypothesis that the sensitizing effect of uncertainty is stronger for trust than for procedural fairness (Hypothesis 4).

Third, Study 7 examined whether trust mediates the relationship between procedural fairness and organizational attraction (Hypothesis 5). This would imply that trust judgments are more comprehensive than procedural fairness judgments, which is a precondition for Hypothesis 4.

3.4.1.1 Method

Respondents and procedure. The procedure of Study 7 was similar to that of Study 4. One hundred and twenty-one individuals completed the survey. The average age was 28.97 years (*SD* = 8.82), 60 per cent were female. To circumvent the influence of the responses to the social comparison orientation scale on the responses to the other measures, trust, procedural fairness, and organizational attraction were measured first and social comparison orientation was measured last.

IV1: Trust. The seven-item trust scale by Robinson (1996) was used to measure applicants' trust in the organization. Items were averaged to form a single score of organizational trust (Cronbach's α = .69).

IV2: Procedural fairness. Applicants' perceived fairness of the selection procedure was measured with four items adapted from Dineen, Noe, and Wang (2004) as well as Steiner and Gilliland (1996), for example "The company acts fairly during its contacts with candidates" and "This company treats candidates in a just manner" (1, *strongly disagree*, 7, *strongly agree*). Items were combined to a single score of procedural fairness (Cronbach's α = .86).

IV3: Social comparison orientation. Social comparison orientation was assessed with an 11-item measure of social comparison orientation by Gibbons and Buunk (1999). Sample items were "I am not the type of person who compares often with others" (reversed) and "If I want to learn more about something, I try to find out what others think about it" (1, *strongly disagree*, 7, *strongly agree*). Items were combined to an index of social comparison orientation (Cronbach's α = .85).

***DV: Organizational attraction*.** Applicants' attraction to the company was assessed via the organizational attraction scale by Highhouse and colleagues (2003). Items were combined to a single score of organizational attraction (Cronbach's α = .91).

3.4.1.2 Results

Relationships between variables. Means, standard deviations, and intercorrelations of the study variables are presented in Table 2. Organizational attraction was positively related to trust, $r = .42$, $p < .001$, and to procedural fairness, $r = .32$, $p < .001$. Trust and procedural fairness were positively correlated, $r = .43$, $p < .001$. Social comparison orientation did not significantly correlate with any of the variables, all r*s* < -.13, *p*s > .155.

Table 2. Means, standard deviations, and intercorrelations among study variables (Study 7).

	M	*SD*	1	2	3
1. Social comparison orientation	4.02	1.12			
2. Trust	5.74	0.91	-0.10		
3. Procedural fairness	4.83	1.17	-0.13	0.43***	
4. Organizational attraction	6.56	0.54	-0.10	0.42***	0.32***

Note. *** $p < .001$ (two-tailed).

Test of Hypothesis 2. A hierarchical moderated regression analysis (Aiken & West, 1991) was conducted with organizational attraction as dependent variable (see

Appendix E, Table 7). Trust, procedural fairness, and social comparison orientation (all centered) were entered as predictors in Step 1, the two-way interaction terms were entered in Step 2, and the three-way interaction was entered in Step 3. The full model was significant, $R^2 = .25$, $F(1, 113) = 5.33$, $p < .001$. There was a significant main effect of trust, $b = .18$, $t(113) = 2.92$, $p = .004$, and a significant main effect of procedural fairness, $b = .10$, $t(113) = 2.33$, $p = .021$. As hypothesized, the interaction between trust and social comparison orientation was significant, $b = .11$, $t(113) = 2.26$, $p = .026$, and incrementally explained five per cent of the variance.

To interpret this interaction effect, simple slopes of the relationship between trust and organizational attraction for low and high social comparison orientation were analyzed. When social comparison orientation was low (1 *SD* below the mean), trust was positively related to organizational attraction, $b = .18$, $t(117) = 2.76$, $p = .007$. When social comparison orientation was high (1 *SD* above the mean), the relationship between trust and organizational attraction was also positive but more pronounced, $b = .32$, $t(117) = 4.63$, $p < .001$. Importantly, the difference between the simple slopes was significant, $t(117) = 2.27$, $p = .012$. Hence, the relationship between trust and organizational attraction was stronger when social comparison orientation was high compared to when it was low. Individuals who tended to compare themselves more with others were more sensitive to trust than those who compared themselves less with others. Figure 11 displays the results.[19]

[19] To fully analyze the interaction between trust and social comparison orientation, simple slopes of the relationship between social comparison orientation and organizational attraction for low and high trust were also analyzed. Neither the simple slope for low trust (1 *SD* below the mean), $b = -.08$, $t(117) = -1.50$, $p = .136$, nor the simple slope for high trust (1 *SD* above the mean), $b = .03$, $|t| < 1$, was significant.

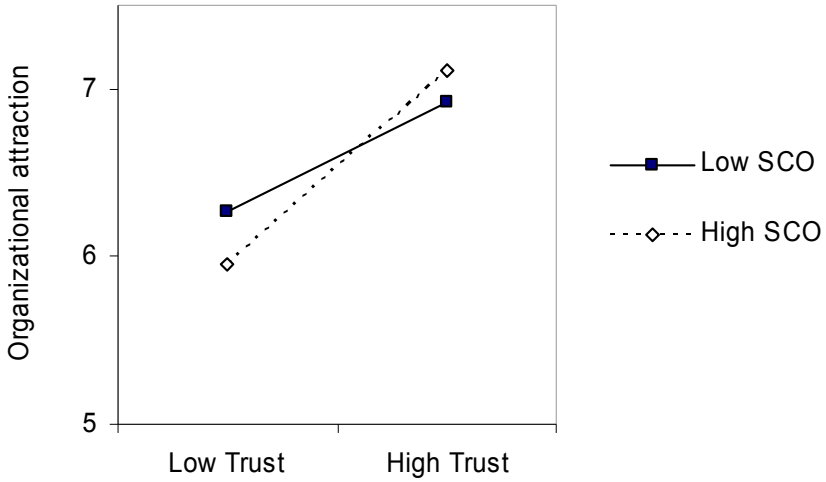

Figure 11. Mean ratings of organizational attraction as a function of trust (1 *SD* below and above the mean) and social comparison orientation (SCO; 1 *SD* below and above the mean) in Study 7. The scale ranged from 1 to 7, higher values represent higher organizational attraction.

Test of Hypothesis 5. It was further examined whether social comparison orientation moderates the relationship between procedural fairness and organizational attraction (Hypothesis 5). For ease of presentation, Hypothesis 5 will be split into two parts, referring to the sensitizing effect of uncertainty to *trust* as *Hypothesis 5a* (which is identical to Hypothesis 2), while referring to the sensitizing effect of uncertainty to *fairness* as *Hypothesis 5b*. Hypothesis 5a was already examined (see above); Hypothesis 5b will now be tested.

As outlined earlier, it was assumed that the sensitizing effect of social comparison orientation to procedural fairness is weak or potentially even non-significant. From a methodological perspective, it is therefore advisable to test the hypothesis that the interaction between procedural fairness and social comparison is *not* significant. Thus, Hypothesis 5b was translated into the hypothesis that uncertainty *does not* increase sensitivity to procedural fairness. Note that this hypothesis is empirically

supported when H_0 is accepted. To decrease the probability of committing a Type II error, the value of α for this hypothesis was set to .10 and H_0 was rejected at an α-level of .10 instead of .05 (see also Studies 5 and 6 for a similar proceeding).

In the regression analysis that was reported above, the interaction between procedural fairness and social comparison orientation was not significant at an α-level of .10, b = -.06, $t(113) = -1.51$, $p = .134$. Hence, the relationship between procedural fairness and organizational attraction was not moderated by social comparison orientation. This means that social comparison orientation did not sensitize individuals to procedural fairness.

In the reported hierarchical moderated regression, all other main and interaction effects (the main effect of social comparison; the two-way interaction between trust and procedural fairness; and the three-way interaction between trust, procedural fairness, and social comparison orientation) were not significant, all $|b|$s < .04, $|t|$s < 1.03, ps > .306.

Mediation analysis. So far, trust and procedural fairness were simultaneously entered as predictors in the reported regression analysis. The subsequent regression analyses were conducted to analyze whether trust mediates potential effects of procedural fairness on organizational attraction (see Baron & Kenny, 1986). As predicted, regression analyses revealed that (a) procedural fairness was a significant predictor of trust, b = .39, $t(119) = 7.64$, $p < .001$, (b) procedural fairness was a significant predictor of organizational attraction, b = .15, $t(119) = 4.37$, $p < .001$, and (c) when both procedural fairness and trust were entered as predictors, the effect of trust on organizational attraction was significant, b = .18, $t(118) = 3.07$, $p = .003$, while the effect of procedural fairness on organizational attraction was reduced to non-significance, b = .08, $t(118) = 1.94$, $p = .54$. A Sobel test (Sobel, 1982) further indicated that when trust was added as a predictor, the reduction of the effect of procedural

fairness on organizational attraction was significant, $z = 2.83$, $p = .005$. Figure 12 displays the mediation model.

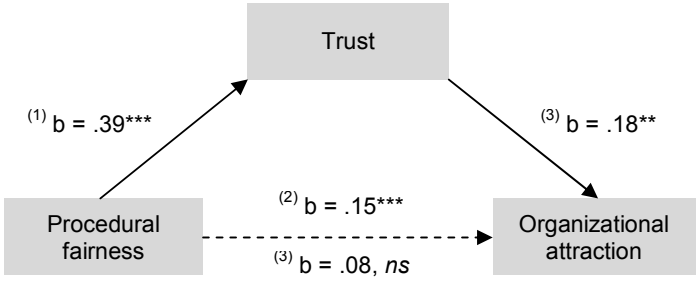

Figure 12. Trust as a mediator of the relationship between procedural fairness and organizational attraction in Study 7.

Notes. *b* = unstandardized regression coefficients; ** $p < .01$*** $p < .001$; (1) Trust was regressed on procedural fairness; (2) Organizational attraction was regressed on procedural fairness; (3) Organizational attraction was simultaneously regressed on trust and procedural fairness.

A test of the reversed mediation model (i.e., procedural fairness as mediator of the relationship between trust and organizational attraction) was not significant, $z = 1.91$, $p = .060$. Together, these results indicate that trust fully mediated the effect of procedural fairness on organizational attraction, providing support for Hypothesis 4.

3.4.1.3 Discussion

Study 7 demonstrated that individuals high in social comparison orientation—an indicator of chronic uncertainty about the self—are more sensitive to trust than individuals low in social comparison orientation. Note that the reliability of the trust scale was not very high (Cronbach's $\alpha = .69$), making it more difficult to detect a significant effect. The fact that the interaction between trust and social comparison orientation was nonetheless significant demonstrates the strength of this effect. Notably, social comparison orientation only increased individuals' sensitivity to trust, but not to

procedural fairness. Results furthermore revealed that the effect of procedural fairness on organizational attraction was fully mediated by trust, providing evidence for the notion that trust judgments are often more comprehensive and encompass more information about social relationships than procedural fairness judgments.

Study 7 has some potential limitations which will be addressed in Study 8. First, Study 7 used a direct measure of procedural fairness. That is, participants were asked directly how fair they considered the selection procedure. To rule out the possibility that the non-significant interaction between uncertainty and procedural fairness in Study 7 was due to the specific measurement of procedural fairness, an indirect measure of procedural fairness will be used in Study 8, assessing different aspects of procedural fairness (see Colquitt & Shaw, 2005).

Second, Study 7 used social comparison orientation as a proxy for individuals' chronic uncertainty. This construct reflects how strongly individuals engage in social comparison processes and thus focuses on cognitive components of uncertainty. To demonstrate that it is not only chronic cognitive uncertainty but also chronic affective uncertainty that increases individuals' responsiveness to trust, an affective uncertainty construct will be employed in Study 8, namely emotional uncertainty (Greco & Roger, 2001).

Third, in Study 7 trust was assessed first, followed by procedural fairness, organizational attraction, and social comparison orientation. Hence, trust was particularly salient to respondents when the dependent variable of organizational attraction was measured. It is possible that uncertain individuals relied more strongly on trust (but not on procedural fairness) because trust was especially salient, but that they would have relied more strongly on procedural fairness if trust had been less salient. To rule out this possibility, the order of measurement was altered in Study 8 such that procedural fairness was assessed first, followed by organizational attraction, trust, and uncertainty.

Thus, in Study 8 trust was not salient, while procedural fairness was particularly salient when the dependent variable was measured. This decreases the chance of detecting a sensitizing effect of uncertainty to trust, but increases the chance of detecting a sensitizing effect to procedural fairness, thus rendering the test of Hypotheses 2 and 5 more conservative.

Fourth, it is possible that the non-significant interaction between social comparison orientation and procedural fairness was partly due to the fact that interactions are hard to detect in field studies because of high error variance (McClelland & Judd, 1993). One possible way to counteract this problem is to increase the power of the design. This will be done in Study 8 by increasing the sample size.

3.4.2 Study 8

The aim of Study 8 was to conceptually replicate the results of Study 7 and to address the potential limitations of Study 7 outlined above. Study 8 tested the prediction that emotional uncertainty increases sensitivity to trust-related information, such that the relationship between trust and organizational attraction is more pronounced when emotional uncertainty is high than when it is low. Emotional uncertainty captures how individuals respond emotionally to experiencing uncertainty or being exposed to uncertain situations. It is positively related to neuroticism and state anxiety, and negatively related to self-esteem (Greco & Roger, 2001). Moreover, it was examined whether the non-significant interaction between procedural fairness and uncertainty in Study 7 would recur in Study 8.

3.4.2.1 Method

Respondents and procedure. The procedure of Study 8 was similar to that of Studies 4 and 7. Four hundred and twenty-eight applicants completed the survey. The average age was 26.35 years (*SD* = 5.58), 74 per cent were female. As noted above,

procedural fairness was measured first, followed by organizational attraction and trust. Emotional uncertainty was assessed last to avoid any influence of answers to this scale on responses to the other measures.

IV1: Trust. Applicants' trust in the organization was measured via the seven-item trust scale by Robinson (1996). Items were averaged to form a single score of organizational trust (Cronbach's α = .70).

IV2: Procedural fairness. Applicants' perceived fairness of the selection procedure was measured with 19 items of the Selection Procedural Justice Scale (SPJS) by Bauer and colleagues (2001). This scale is an indirect measure of procedural fairness and is based on Gilliland's (1993) rules of procedural fairness in selection processes. The original scale comprises 11 subscales with a total of 39 items. Four subscales were omitted in this study (*Openness*, *Treatment*, *Feedback*, and *Reconsideration Opportunity*) because they did not apply to the selection procedure of the company. The subscales used in this study were *Job-relatedness Predictive* (2 items, e.g. "Doing well in the online assessment means a person can do the job well"), *Job-relatedness Content* (2 items, e.g. "It would be clear to anyone that the tests and contents of the online assessment are related to the job"), *Information Known* (3 items, e.g. "I knew what to expect of the online assessment"), *Chance to perform* (4 items, e.g. "The online assessment gives applicants the opportunity to show what they can really do"), *Consistency* (2 items, e.g. "The online assessment was administered to all applicants in the same way"), *Communication* (3 items, e.g. "I am satisfied with the communication that occurred during the online assessment"), and *Propriety of questions* (3 items, e.g. "The content of the online assessment seemed appropriate"). Answers were given on Likert scales (1, *strongly disagree*, 7, *strongly agree*). Items were combined to a single score of procedural fairness (Cronbach's α = .89).

IV3: Emotional uncertainty. Emotional uncertainty was measured by the emotional uncertainty scale by Greco and Roger (2001). The scale is composed of 15 items, for example “When uncertain about what to do next, I tend to feel lost” and “I am hesitant when it comes to making changes” (1, *strongly disagree*, 7, *strongly agree*). Items were combined to a single score of emotional uncertainty (Cronbach’s α = .93).

DV: Organizational attraction. Applicants’ attraction to the company was assessed via the organizational attraction scale by Highhouse and colleagues (2003). Items were combined to form an index of organizational attraction (Cronbach’s α = .90).

3.4.2.2 Results

Relationships between variables. Table 3 presents the descriptive statistics and intercorrelations of the study variables. Organizational attraction was positively related to trust, $r = .51$, $p < .001$, and to procedural fairness, $r = .24$, $p < .001$. Trust and procedural fairness were positively correlated, $r = .41$, $p < .001$. Emotional uncertainty was negatively correlated with trust, $r = -.17$, $p < .001$, and organizational attraction, $r = -.12$, $p = .013$.

Table 3. Means, standard deviations, and intercorrelations among study variables (Study 8).

	M	*SD*	1	2	3
1. Emotional uncertainty	2.48	1.02			
2. Trust	5.83	0.89	-0.17***		
3. Procedural fairness	4.65	0.97	0.00	0.41***	
4. Organizational attraction	6.57	0.59	-0.12*	0.51***	0.24***

Note. * $p < .05$; *** $p < .001$ (two-tailed).

Test of Hypothesis 2. A hierarchical moderated regression analysis (Aiken & West, 1991) was conducted with organizational attraction as dependent variable (see Appendix F Table 8). Trust, procedural fairness, and emotional uncertainty (all centered)

were entered as predictors in Step 1, the two-way interaction terms were entered in Step 2, and the three-way interaction was entered in Step 3. The full model was significant, $R^2 = .28$, $F(1, 420) = 23.49$, $p < .001$. Trust was a significant predictor of organizational attraction, $b = .32$, $t(420) = 10.08$, $p < .001$. In line with predictions, the interaction between trust and emotional uncertainty was significant, $b = .09$, $t(420) = 3.29$, $p < .001$, and incrementally explained two per cent of the variance.

To interpret this interaction effect, simple slopes of the relation between trust and organizational attraction for low and high emotional uncertainty were analyzed. For individuals low in emotional uncertainty (1 *SD* below the mean) trust was positively related to organizational attraction, $b = .25$, $t(424) = 6.45$, $p < .001$. For individuals high in emotional uncertainty (1 *SD* above the mean) the relation between trust and organizational attraction was also positive but more pronounced, $b = .41$, $t(424) = 11.18$, $p < .001$. The difference between the simple slopes was significant, $t(424) = 3.31$, $p < .001$. Hence, when emotional uncertainty was high the relationship between trust and organizational attraction was stronger than when emotional uncertainty was low. Thus, emotionally uncertain individuals were more sensitive to trust than emotionally certain individuals. Results are displayed in Figure 13.[20]

[20] To fully analyze the interaction between trust and emotional uncertainty, simple slopes of the relationship between emotional uncertainty and organizational attraction for low and high trust were also analyzed. When trust was low (1 *SD* below the mean), the simple slope was negative, $b = -.07$, $t(424) = -2.48$, $p = .014$. That is, when trust was low, individuals who felt uncertain evaluated the organization as less attractive than did individuals who felt certain. When trust was high (1 *SD* above the mean), the simple slope was positive but not significant, $b = .07$, $t(424) = 1.86$, $p = .063$. By trend, when trust was high individuals who felt uncertain evaluated the organization as more attractive than did individuals who felt certain. Taken together, uncertainty tended to increase individuals' sensitivity to trust both when trust was low and high.

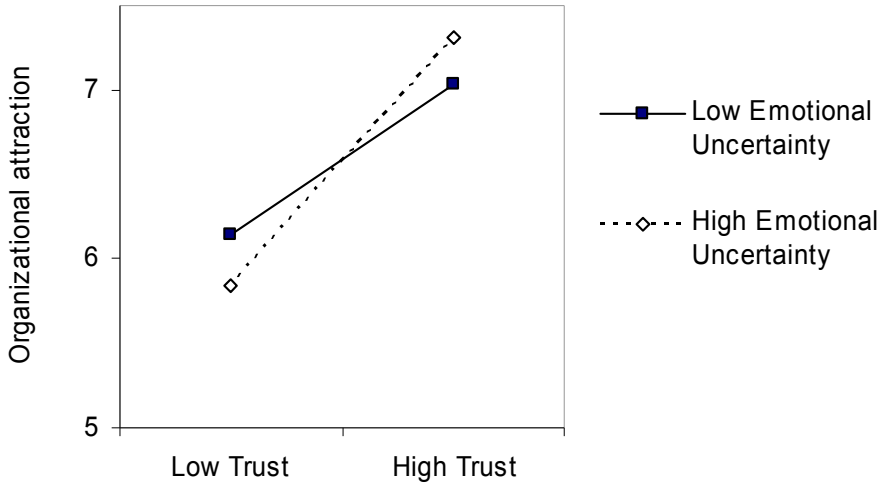

Figure 13. Mean ratings of organizational attraction as a function of trust (1 *SD* below and above the mean) and emotional uncertainty (1 *SD* below and above the mean) in Study 8. The scale ranged from 1 to 7, higher values represent higher organizational attraction.

Test of Hypothesis 5. In the hierarchical moderated regression analysis reported above, the interaction between procedural fairness and emotional uncertainty was not significant, $b = .02$, $t(420) = -.50$, $p = .603$. Note that, as in Study 7, the α-level for this specific hypothesis (Hypothesis 5b) was set to .10 in order to decrease the probability of accepting H_0 while H_0 is not true. Emotional uncertainty did not moderate the relationship between procedural fairness and organizational attraction. In other words, emotional uncertainty did not increase individuals' sensitivity to procedural fairness.

In the reported hierarchical moderated regression, all other main and interaction effects (the main effect of procedural fairness; the main effect of emotional uncertainty; the two-way interaction between trust and procedural fairness; and the three-way interaction between trust, procedural fairness, and emotional uncertainty) were not significant, all $|b|$s < .02, $|t|$s < 1.03, ps > .303.

Mediation analysis. In the regression analyses reported above, trust and procedural fairness were entered as predictors simultaneously. In the following regression analyses, it was examined whether potential effects of procedural fairness on organizational attraction are mediated by trust (see Baron & Kenny, 1986). The analyses revealed that (a) procedural fairness predicted trust, $b = .38$, $t(426) = 9.38$, $p < .001$, (b) procedural fairness predicted organizational attraction, $b = .15$, $t(426) = 5.15$, $p < .001$, and (c) when both procedural fairness and trust were entered as predictors, the effect of trust on organizational attraction was significant, $b = .33$, $t(425) = 10.74$, $p < .001$, while the effect of procedural fairness on organizational attraction was reduced to non-significance, $b = .02$, $|t| < 1$. A Sobel test further showed that the reduction of the effect of procedural fairness on organizational attraction when trust was added as a predictor was significant, $z = 6.99$, $p < .001$. The mediation model is displayed in Figure 17 (Appendix G). The reversed mediation model (i.e., procedural fairness as mediator of the relationship between trust and organizational attraction) was not significant, $z < 1$. Supporting Hypothesis 4, these results indicate that the relation between procedural fairness and organizational attraction was fully mediated by trust.

3.4.2.3 Discussion

Study 8 demonstrated that the positive relationship between trust and organizational attraction was more pronounced among emotionally uncertain than emotionally certain individuals. This indicates that emotional uncertainty sensitizes individuals to trust, thus conceptually replicating the finding from Studies 4 and 7 that individuals who feel uncertain are more responsive to trust-related information. Furthermore, as in Study 7, emotional uncertainty did not render individuals more sensitive to procedural fairness. This was the case even though procedural fairness was salient when the dependent variable was assessed (while trust was not salient) and

despite of the large sample size (N = 428) which makes it more likely to detect even small effects. Also, the finding that uncertainty does not moderate effects of procedural fairness was replicated across different measurements of procedural fairness (a direct measure in Study 7 and an indirect measure in Study 8) and different operationalizations of personal uncertainty (social comparison orientation in Study 7 and emotional uncertainty in Study 8). Analogous to Study 7, trust fully mediated the relationship between procedural fairness and the attractiveness of the organization.

A potential drawback of Studies 7 and 8 is that both were correlational in nature and therefore do not allow for causal interpretations of the data. In order to draw causal inferences, the findings from Study 7 and 8 need to be replicated in an experimental design. This goal was pursued in Study 9.

3.4.3 Study 9

Study 9 was a scenario study in the personnel selection context in which all constructs (trust, procedural fairness, and uncertainty) were experimentally manipulated. The manipulations of procedural fairness and uncertainty have been applied in previous studies in the framework of the uncertainty management model. Thereby, the results from Study 9 can directly be compared to findings of earlier studies. Specifically, the manipulations of procedural fairness and uncertainty were adapted from Van den Bos (2001a), who showed that individuals' sensitivity to procedural fairness is increased when uncertainty is made salient.

3.4.3.1 Method

Participants and design. One hundred and seventeen students of the University of Mannheim participated in an experiment labelled 'Evaluating an Organization' in return for 1 Euro and a chocolate bar. The average age of participants was 21.82 years (SD = 2.95), 55 per cent were female. The average time participants

had been studying was 3.60 semesters (*SD* = 3.40). Participants were randomly assigned to a 2 (trustworthiness of the organization: low vs. high) x 2 (procedure: fair vs. unfair) x 2 (salience: uncertainty vs. certainty) between subjects design.

Experimental procedure. When participants arrived at the laboratory, they were given paper-pencil materials, were seated at separate tables, and signed an informed consent form. First of all uncertainty versus certainty salience was manipulated, after which positive and negative affect were assessed. This was followed by the manipulations of procedural fairness and trust. The dependent variable of organizational attraction was then measured. After this, manipulation checks for procedural fairness, trust, and uncertainty were assessed. Finally, participants responded to demographic questions. After completing the questionnaire, participants were thanked for their participation, paid, and debriefed.

IV1: Salience of uncertainty versus certainty. The same procedure as in Studies 5 and 6 was used to manipulate salience of uncertainty versus certainty. Participants wrote down what emotions the thought of being uncertain [certain] arouses in them and what physically happens when they feel uncertain [certain].

Positive and negative affect. The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) was assessed to control for potential effects of positive and negative mood. The subsets were averaged to scores of positive affect (Cronbach's $\alpha = .85$) and negative affect (Cronbach's $\alpha = .80$).

IV2: Procedural fairness manipulation. A central element of procedural fairness is whether a procedure is or is not accurate (Leventhal, 1980). Procedural fairness was thus manipulated via the accuracy of the selection procedure in this study. Participants were asked to imagine the following situation (cf. Van den Bos, 2001a):

> *You have been looking for a job for a while. You recently found a job advertisement by the company Salis Alba which is in accordance with*

your profile and which you find very appealing. Since you are keen on getting this job, you immediately send your application to Salis Alba. Fortunately, Salis Alba informs you that they are interested in you as a potential employee. You are invited to a personnel selection procedure which all applicants have to complete. Finally, the day has come when you take part in the selection procedure. The selection procedure consists of nine parts: an intelligence test, a personality test, a test assessing mathematical skills, a test assessing understanding of technical matters, a test assessing calculation skills, a test assessing language skills, a questionnaire assessing demographic data, a test assessing achievement motivation, and an interview with a person from the human resources department at Salis Alba.

Participants in the fairness condition read [unfairness condition in brackets]:

After two weeks you are informed that based on the company's decision out of the nine parts of the selection process all nine parts [only one part] were [was] graded and that the company's hiring decision is based on the graded parts [part] only. You are further told that you will be informed about the result of your application in one week.

IV3: Trust manipulation. Participants then read the following:

In order to prepare for possible further contacts with Salis Alba, you are searching the internet for information about the company. During your search you find a website with evaluations of companies. On this website there is a forum with statements about Salis Alba by employees and former applicants.

The organizations' trustworthiness was manipulated in the same way as in Study 5. Participants read six statements holding that the company was trustworthy or not

trustworthy. The statements reflected the three dimensions of trustworthiness identified by Mayer and colleagues (1995), namely benevolence, ability, and integrity.

DV: Organizational attraction. As before, participants' attraction to the company was assessed via the organizational attraction scale by Highhouse and colleagues (2003). Items were combined to an index of organizational attraction (Cronbach's α = .95).

Manipulation check trust. Participants' perceived trustworthiness of the company was measured with the trust scale by Robinson (1996) and one additional item ("I trust Salis Alba"). Items were averaged to form a single score of organizational trust (Cronbach's α = .92).

Manipulation check procedural fairness. Participants' perceptions of the fairness of the selection procedure were measured with five items based on Van den Bos, Bruins, Wilke, and Dronkert (1999) and Van Prooijen, Van den Bos, and Wilke (2007), for example "I perceived the way I was treated as fair" and "The selection procedure at Salis Alba was accurate" (1, *strongly disagree*, 7, *strongly agree*). Items were combined to a single score of procedural fairness (Cronbach's α = .92).

Manipulation check uncertainty versus certainty salience. Participants were asked how much they had thought about uncertainty or certainty when responding to the salience manipulation (0, *I thought about uncertainty,* 10, *I thought about certainty*).

3.4.3.2 Results

Manipulation check trust. A 2 (trust) x 2 (procedural fairness) x 2 (salience) analysis of variance on the trust score revealed that participants in the low-trust condition rated the company as less trustworthy (M = 3.34, SD = 1.03) than participants in the

high-trust condition (M = 4.47, SD = 1.03), $F(1, 108) = 35.62$, $p < .001$, $\eta^2 = .25$.[21] All other effects were not significant, all Fs < 2.47, ps > .120, η^2s < .02.

Manipulation check procedural fairness. A 2 (trust) x 2 (procedural fairness) x 2 (salience) analysis of variance on the procedural fairness score revealed a main effect of the fairness manipulation, $F(1, 109) = 20.81$, $p < .001$, $\eta^2 = .16$. Participants in the unfair condition rated the selection procedure as less fair (M = 3.54, SD = 1.55) than participants in the fairness condition (M = 4.67, SD = 1.15). Additionally, there was an unexpected main effect of the trust manipulation, $F(1, 109) = 5.55$, $p = .020$, $\eta^2 = .05$. Participants in the low-trust condition rated the selection procedure as less fair (M = 3.82, SD = 1.35) than participants in the high-trust condition (M = 4.40, SD = 1.54). However, note that the effect of the procedural fairness manipulation on the procedural fairness ratings ($\eta^2 = .16$) was significantly stronger than the effect of the trust manipulation on the procedural fairness ratings ($\eta^2 = .05$). The difference between the effect sizes was significant, $z = 1.95$, $p = .013$ (one-tailed). All other effects were not significant, all Fs < 3.01, ps > .087, η^2s < .03.[22]

Manipulation check uncertainty versus certainty salience. A 2 (trust) x 2 (procedural fairness) x 2 (salience) analysis of variance on the uncertainty manipulation check ratings revealed that participants in the uncertainty salient condition thought more about uncertainty (M = 3.53, SD = 2.67), whereas participants in the

[21] One participant did not answer the trust items. The N for this analysis was therefore 116.

[22] The interaction between procedural fairness and uncertainty was marginally significant, $F(1, 109) = 3.01$, $p = .086$, $\eta^2 = .03$. When certainty was salient, participants in the unfair condition rated the procedure as less fair (M = 3.88, SD = 1.52) than participants in the fair condition, (M = 4.59, SD = 1.14), $F(1, 113) = 4.06$, $p < .001$, $\eta^2 = .15$. When uncertainty was salient, participants in the unfair condition also rated the procedure as less fair (M = 3.19, SD = 1.52) than participants in the fair condition (M = 4.76, SD = 1.18), $F(1, 113) = 37.63$, $p = .046$, $\eta^2 = .04$. The effect of the procedural fairness manipulation on the procedural fairness manipulation check measure was by trend more pronounced in the uncertainty salient condition ($\eta^2 = .15$) than in the certainty salient condition ($\eta^2 = .04$), $z = 1.37$, $p = .085$.

certainty salient condition thought more about certainty (M = 6.48, SD = 2.46), $F(1, 109) = 37.63$, $p < .001$, $\eta^2 = .26$. All other effects were not significant, all Fs < 1.95, ps > .167, η^2s < .02. Taken together, the results suggest that trust, procedural fairness, and uncertainty were successfully operationalized.

Positive and negative affect. A 2 (trust) x 2 (procedural fairness) x 2 (salience) analysis of variance on the *positive affect* subset of the PANAS revealed no significant effects, all Fs < 3.44, ps > .066, η^2s < .03.[23] Similarly, a 2 (trust) x 2 (procedural fairness) x 2 (salience) analysis of variance on the *negative affect* subset of the PANAS yielded no significant effects, all Fs < 1. Hence, the experimental groups did not differ in mood. Moreover, the uncertainty versus certainty salience manipulation did not influence positive or negative affect. The effects reported in the following can therefore not be explained by differences in positive or negative affect.

Test of Hypothesis 2. Means and standard deviations of organizational attraction are displayed in Table 4.

[23] The main effect of salience was marginally significant, $F(1, 109) = 3.44$, $p = .066$, $\eta^2 = .03$. Scores on the positive affect subset of the PANAS were by trend higher when certainty was salient, (M = 3.19, SD = .75) than when uncertainty was salient (M = 2.95, SD = .64). Importantly, however, controlling for the positive (and negative) subset of the PANAS did not affect any of the results of Study 9.

Table 4. Means and standard deviations of organizational attraction as a function of trust and salience of uncertainty versus certainty (Study 9).

		Uncertainty Salient		Certainty Salient	
		M	*SD*	*M*	*SD*
Unfair Procedure	Low Trust	3.35_{a}	1.08	3.47_{a}	1.14
	High Trust	5.14_{b}	1.20	4.71_{bc}	0.90
Fair Procedure	Low Trust	3.37_{a}	1.07	3.72_{a}	0.71
	High Trust	5.08_{bc}	0.77	4.49_{c}	0.96

Note. The scale ranged from 1 to 7, higher values represent higher organizational attraction. Means with no subscript in common differ significantly from another, as indicated by contrast analyses.

A 2 (trust) x 2 (procedural fairness) x 2 (salience) analysis of variance on the organizational attractiveness ratings revealed a significant main effect of trust, $F(1, 109) = 56.67$, $p < .001$, $\eta^2 = .34$, indicating that participants in the trustworthy condition rated the organization as more attractive ($M = 4.86$, $SD = .99$) than participants in the untrustworthy condition ($M = 3.48$, $SD = 1.00$). As predicted, this main effect was qualified by a significant interaction between trust and uncertainty, $F(1, 109) = 4.11$, $p = .045$, $\eta^2 = .04$. Pairwise comparisons were conducted to interpret this interaction effect. Within the certainty salient condition, participants in the low trust condition rated the company as less attractive ($M = 3.59$, $SD = 0.94$) than participants in the high trust condition ($M = 4.60$, $SD = 0.92$), $F(1, 113) = 15.59$, $p < .001$, $\eta^2 = .12$. Within the uncertainty salient condition, participants in the low trust condition also rated the company as less attractive ($M = 3.36$, $SD = 1.05$) than participants in the high trust condition ($M = 5.11$, $SD = 0.99$), $F(1, 113) = 46.54$, $p < .001$, $\eta^2 = .29$. Importantly, the effect of the trust manipulation on organizational attraction was significantly stronger in the uncertainty salience condition than in the salience condition, $z = 1.57$, $p = .029$ (one-

tailed). That is, participants in the uncertainty salient condition were more sensitive to the company's trustworthiness than participants in the certainty salient condition. Figure 14 illustrates the results.[24]

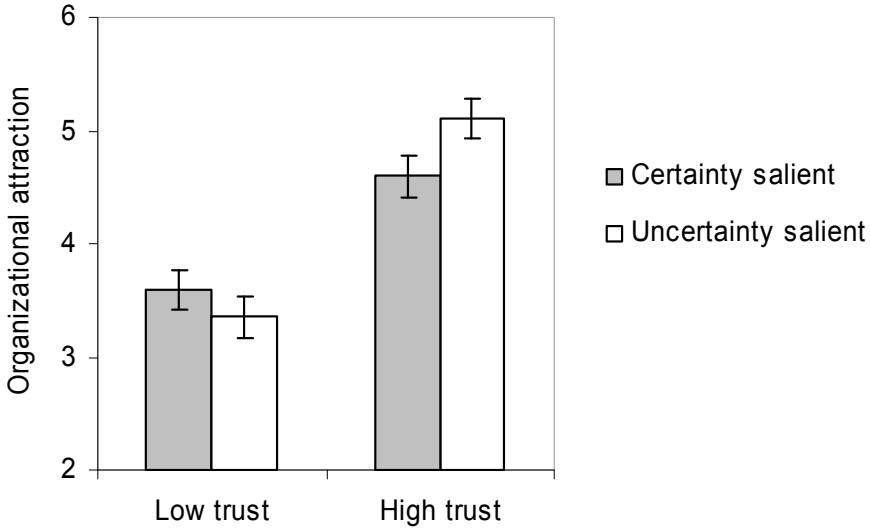

Figure 14. Mean ratings (and standard errors) of organizational attraction as a function of trust (low versus high) and salience (uncertainty versus certainty) in Study 9. The scale ranged from 1 to 7, higher values represent higher organizational attraction.

Test of Hypothesis 5. In the analysis of variance reported above, the interaction between procedural fairness and uncertainty was not significant, $F < 1$, $p > .93$, $\eta^2 = .00$. Again, to decrease the probability of accepting H_0 while H_0 is not true the α-level for this specific hypothesis (Hypothesis 5b) was set to .10. Hence, uncertainty salience did not render participants more sensitive to procedural fairness information.

[24] Further analyses revealed that in the low trust condition the difference between the uncertainty and the certainty salient condition was not significant, $F < 1$. In the high trust condition, participants in the uncertainty salient condition rated the company as more attractive than in the certainty salient condition, $F(1, 113) = 4.05$, $p = .047$, $\eta^2 = .04$. Hence, uncertainty salience increased participants' sensitivity to trust particularly in the high trust condition.

In the above reported analysis of variance, all other main and interaction effects were not significant (the main effect of procedural fairness; the main effect of salience; the two-way interaction between trust and procedural fairness; and the three-way interaction between trust, procedural fairness, and salience), all *F*s < 1.

Mediation analysis. To test for mediation, separate regression analyses were conducted (Baron & Kenny, 1986). These analyses indicated that (a) procedural fairness ratings predicted trust ratings, $b = .43$, $t(114) = 6.89$, $p < .001$, (b) procedural fairness ratings predicted organizational attraction, $b = .28$, $t(114) = 3.88$, $p < .001$, and (c) when procedural fairness ratings and trust ratings were simultaneously entered as predictors, trust ratings predicted organizational attraction, $b = .67$, $t(113) = 7.75$, $p < .001$, but the effect of procedural fairness ratings on organizational attraction was no longer significant, $b = -.01$, $|t| < 1$.[25] A Sobel test indicated that when trust was added as a predictor the effect of procedural fairness on organizational attraction was significantly decreased, $z = 5.13$, $p < .001$. Figure 18 (Appendix H) illustrates the mediation model. Testing for reversed mediation (procedural fairness mediating the relationship between trust and organizational attraction) yielded non-significant results, $z < 1$. Taken together, in support of Hypothesis 4, the relationship between procedural fairness ratings and the attractiveness of the organization was fully mediated by trust ratings.

3.4.3.3 Discussion

Study 9 demonstrated in an experimental design that uncertainty salience as compared to certainty salience increases sensitivity to trust, thus conceptually replicating the findings from Studies 4, 5, 7, and 8. Notably, and in line with Studies 7 and 8, uncertainty salience did not increase sensitivity to procedural fairness. This was the case

[25] One participant did not answer the trust items. The *N* for this analysis was therefore 116.

even though exactly the same manipulations of procedural fairness and uncertainty were used as in previous studies in the framework of the uncertainty management model. Moreover, as in Studies 7 and 8, perceptions of the company's trustworthiness fully mediated the relationship between the perceived fairness of the procedure and organizational attractiveness.

3.4.4 Summary of Part D

In this part it was demonstrated that the sensitizing effect of uncertainty to trust is stronger than the sensitizing effect of uncertainty to procedural fairness. Notably, uncertainty did not render individuals more responsive to procedural fairness in any of the studies presented here. By contrast, uncertainty increased responsiveness to trust-related information in all three studies. These results were independent of the order in which the concepts were measured and of the way procedural fairness was assessed. The findings were replicated in two field studies and a laboratory experiment, which allows for a causal interpretation of the results and at the same time shows that they are valid outside the laboratory. Moreover, all three studies consistently show that trust fully mediated procedural fairness effects, corroborating the notion (and precondition for the above reported findings) that trust judgments are more comprehensive than procedural fairness judgments.

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4 GENERAL DISCUSSION

The current dissertation investigated the role of trust in the process of managing personal uncertainty. Personal uncertainty is mostly experienced as an aversive state and individuals are therefore motivated to cope with their uncertainty about the self and social relationships. A central assumption underlying this research was that relational information, in particular trust-related information, helps individuals cope with personal uncertainty. Following from this notion, I hypothesized that personal uncertainty renders individuals particularly sensitive to trust-related information. This sensitizing effect of uncertainty was assumed to be specific to relational information, such as trust, rather than being generally valid for all types of judgment-relevant information. Specifically, I predicted that personal uncertainty does not increase individuals' sensitivity to non-relational information. The outlined considerations were further explored in the light of previous research showing that uncertainty increases sensitivity to fairness. Based on the assumption that trust judgments often comprise more relational information than procedural fairness judgments, I expected that individuals who feel personally uncertain more likely draw on trust information rather than procedural fairness information to manage their uncertainty.

These predictions were tested in a series of studies. The following chapters summarize the main results of this dissertation project (Chapter 4.1), discuss theoretical implications (Chapter 4.2), address open questions and suggest perspectives for future research (Chapter 4.3), and integrate the current results into a more general uncertainty framework (Chapter 4.4).

4.1 Summary of findings

4.1.1 Uncertainty reduction by means of trust

The current research is the first to provide causal evidence for the notion that trust-related information provides a means of reducing personal uncertainty, including both relational and self-uncertainty. These findings are in line with theoretical considerations on the relation between trust and uncertainty (e.g., Boon & Holmes, 1991; Dirks & Ferrin, 2001; Holmes & Rempel, 1989; Lind, 2001; Luhmann, 1968; Sorrentino et al., 1995; Tyler & Lind, 1992; Yamagishi et al., 1998). Specifically, when individuals believed another party was trustworthy, their experienced uncertainty in the specific situation and their uncertainty regarding the other party was lower than when they had no information about that party (Study 1). The mere salience of trust-related knowledge also resulted in lower levels of uncertainty about another party (Study 2). Study 3 demonstrated that not all types of information (e.g., thinking about the rules of the game that was being played) have the potential to decrease uncertainty, but that uncertainty reduction was specific to information that is revealing about the quality of the social relationship in question, such as trust (here: the assumed trustworthiness of the other player). Interestingly, and in line with theory (e.g., Lewicki et al., 1998; Lewis & Weigert, 1985; Luhmann, 1968) and current predictions, uncertainty was also diminished when the trust-related information was negative, that is, when individuals believed the other party was not trustworthy (Study 3). The question whether distrust always has the potential to reduce uncertainty or whether this depends on specific conditions will be discussed in Chapter 4.3.1. In sum, information about a party's trustworthiness provides an effective means of reducing personal uncertainty. This was demonstrated in controlled laboratory experiments and a field study, thus providing both causal evidence for and external validity of the effect.

4.1.2 Increased sensitivity to trust under uncertainty

The finding that trust-related information reduces personal uncertainty constitutes a central precondition for the hypothesis that trust is particularly relevant for individuals when they feel uncertain and that uncertainty thus sensitizes individuals to information about a party's trustworthiness. This reasoning is supported by the current results. Five studies consistently demonstrate that the positive relationship between trust and organizational attraction is stronger under conditions of uncertainty than under conditions of certainty. This sensitizing effect of uncertainty to trust was demonstrated for a range of different personal uncertainty constructs, namely self-uncertainty during the selection procedure (Study 4), salience of self-uncertainty (Studies 5 and 9), social comparison orientation as a proxy for chronic personal uncertainty (Study 7), and emotional uncertainty (Study 8). Hence, uncertainty increases responsiveness to trust not only when uncertainty is directly related to trust (as was the case in Study 4, where both constructs pertained to the company and the company's selection procedure), but also when the two constructs are not conceptually linked (as was the case in Studies 5, 7, 8, and 9). This emphasizes the robustness and generalizability of the sensitizing effect of uncertainty to trust. Moreover, the findings were replicated in three field studies and two laboratory experiments. This multimethod approach substantiates the validity of the effect in important applied settings and at the same time allows for a causal interpretation of the results.

4.1.3 No increased sensitivity to non-relational information

In line with hypotheses, personal uncertainty did not increase individuals' responsiveness to information that was judgment-relevant but relationship-irrelevant (Studies 5 and 6). By contrast, individuals who felt uncertain about themselves were even less sensitive to the relationship-irrelevant information (attractiveness of a company

location) than individuals who felt certain. This was also the case when the non-relational information was the only information that was available to participants at the time of judgment (Study 6). Even under such restricted informational conditions did uncertain individuals not respond more strongly to the relationship-irrelevant information, but in fact responded *less* strongly to it than individuals who felt certain about themselves.

Considering these findings together with the result that uncertainty increases sensitivity to trust information yields the following picture: Personal uncertainty sensitizes individuals specifically to relational information (here: trust) while making them insensitive to information which is not revealing about the respective social relationship. Presumably, this is because personal uncertainty directs individuals' attention to information which is most relevant to them, namely to information which can decrease their uncertainty. Other types of information which are not useful for the reduction of personal uncertainty are then disregarded. Since non-relational information is often not useful for dealing with personal uncertainty, individuals who felt uncertain presumably did not pay much attention to this information and were therefore insensitive to it. The notion that uncertain individuals did not strongly respond to non-relational information because it does not contribute to coping with their uncertainty is also supported by the results of Study 3. Thinking about non-relational information (rules of a game) did not reduce uncertainty, whereas thinking about relational information (why to trust or distrust another player) diminished uncertainty. In sum, the sensitizing effect of uncertainty seems to be specific to information which has the potential to reduce uncertainty, such as information about the quality of relevant social relationships.

4.1.4 Interplay of uncertainty, trust, and procedural fairness

As predicted, the sensitizing effect of uncertainty to procedural fairness was weaker than the sensitizing effect of uncertainty to trust (Studies 7, 8, and 9). When both

trust and procedural fairness information were available, individuals used their knowledge about a party's trustworthiness with a higher priority than their knowledge about how fair a procedure was when feeling uncertain.

Notably, uncertainty did not render individuals more responsive to procedural fairness in any of the respective studies (Studies 7, 8, and 9). That is, individuals who felt uncertain did not respond more strongly to procedural fairness information than individuals who felt certain. This finding was replicated across different operationalizations of procedural fairness (direct and indirect measures as well as an experimental manipulation), different orders in which the variables were assessed (fairness was or was not salient), different types of personal uncertainty (social comparison orientation, emotional uncertainty, and salience of uncertainty), and in field studies as well as in a laboratory experiment. These results differ from studies conducted in the realm of the uncertainty management model (Van den Bos & Lind, 2002, 2010), showing that uncertainty increases individuals' responsiveness to procedural fairness information. Possible ways of integrating these differing findings are discussed in Chapter 4.3.7.

As a potential mechanism of the effect that individuals use trust judgments with a higher priority than procedural fairness judgments when feeling uncertain, I have proposed that trust judgments are often more comprehensive and include more information about social relationships than procedural fairness judgments (see for example Mayer et al., 1995). Trust-related information should therefore be particularly relevant in terms of coping with personal uncertainty, and potentially even more so than procedural fairness information. This assumption is corroborated by the finding that the relationship between procedural fairness and the outcome variable was fully mediated by trust in Studies 7, 8, and 9, which is also in line with previous research (e.g., Aryee et al., 2002; Konovsky & Pugh, 1994; Pillai et al., 1999). Hence, trust can at least partly

explain the effect of procedural fairness on subsequent judgments. By contrast, procedural fairness did not mediate the relationship between trust and organizational attraction in any of the present studies. Thus, procedural fairness cannot explain the effect of trust on subsequent judgments. Taken together, this suggests that—at least in the present data—trust judgments contain information over and above fairness judgments and are more global than procedural fairness judgments. This provides an empirical basis for the notion that trust may sometimes be a more useful type of information than procedural fairness when trying to deal with personal uncertainty, presumably because a more comprehensive judgment is more helpful in this respect than a less comprehensive one.

4.2 Theoretical contributions and implications

The reported findings have implications for different fields of theory and research. First, they contribute to the *uncertainty literature*. While the idea that trust reduces uncertainty has frequently been discussed on a theoretical basis (e.g., Boon & Holmes, 1991; Dirks & Ferrin, 2001; Holmes & Rempel, 1989; Lind, 2001; Luhmann, 1968; Sorrentino et al., 1995; Tyler & Lind, 1992; Yamagishi et al., 1998), empirical tests of this proposition have so far been lacking. The current research constitutes a first step in closing this gap by demonstrating that trust indeed reduces uncertainty.

Importantly, several scholars who claim that trust helps decrease uncertainty refer to trust as individuals' *positive* expectations about another party's conduct (Holmes & Rempel, 1989; Sorrentino et al., 1995; Yamagishi et al., 1998). In this sense, a trustworthy party signals that interacting with that party will be safe, that one is accepted as a group member or interaction partner, and that one will be treated respectfully, and this signal reduces feelings of personal uncertainty. However, the present research shows that not only the knowledge that the other party *can* be trusted reduces

uncertainty, but also the belief that the other party *cannot* be trusted. This empirically supports the argument that both trust and distrust diminish social complexity, increase predictability about one's relationships with others, and thereby can diminish uncertainty (Lewicki et al., 1998; Lewis & Weigert, 1985; Luhmann, 1968).

Critics may dismiss the idea that trust reduces uncertainty as not enhancing our understanding of how individuals cope with uncertainty or simply as trivial—after all, who would have expected anything else? This objection, however, becomes invalid when considering both the positive and negative elements of the concept of trust. The fact that distrust can lead to decreased levels of uncertainty is not self-evident, and I would thus consider the question whether trust information helps alleviate uncertainty as being far from trivial.

The finding that uncertainty sensitizes individuals to trust, together with previous studies showing that uncertainty increases sensitivity to fairness (Van den Bos & Lind, 2002, 2010), suggest that uncertainty acts as a catalyst for reactions to relational information, such that sensitivity to relational information is amplified under conditions of uncertainty. Considering that many social situations are characterized by uncertainty (e.g., Hogg & Mullin, 1999; Kagan, 1972; Sora, Caballer, Peiro, & De Witte, 2009; Sorrentino et al., 1995; Van den Bos & Lind, 2002), these findings point to the relevance of uncertainty for cognitions and behaviors in several social contexts. It is possible that uncertainty also increases the importance of and responsiveness to other types of relational information. This will further be discussed in Chapter 4.4.

An alternative explanation for the finding that uncertainty increases individuals' sensitivity to trust-related information could be that uncertainty influences information processing in general, such that feeling uncertain leads individuals to process information more systematically while feeling certain triggers more heuristic processing (e.g., Chaiken et al., 1989; Chen & Chaiken, 1999; Tiedens & Linton, 2001). This means

that the sensitizing effect of uncertainty to trust could have emerged because individuals who felt uncertain simply processed any information that was available more intensely and used the information more for subsequent judgment formation—irrespective of what type of information it was. This alternative explanation was ruled out, however, by demonstrating that personal uncertainty did not increase responsiveness to relationship-irrelevant (but judgment-relevant) information. This result cannot be explained with the idea of generally intensified information processing under uncertainty. It seems that when individuals feel personally uncertain, they become selectively more responsive to those types of information that can diminish their uncertainty. In the case of personal uncertainty, relational information has the potential to do so. Hence, whether uncertainty leads to more intense processing depends on the type of uncertainty as well as the kind of information that is being processed.

Second, the present research extends the *trust literature*. The notion that trust is an important variable which positively affects a multitude of desirable outcomes has often been discussed in the literature and is supported by ample empirical evidence (see Colquitt et al., 2007; Dirks & Ferrin, 2002). However, the question when trust matters most, that is, under what conditions the positive effects of trust (and the negative effects of distrust) are most pronounced has received much less attention. For example, studies have shown that the effects of trust are particularly strong and individuals are more concerned about issues of trustworthiness when outcomes are unfavorable (Brockner, Siegel, Daly, Tyler, & Martin, 1997) or when the trustor has a personal relationship with the trustee (Tyler & Degoey, 1996). Overall, however, research on moderators of the relation between trust and related outcomes is still limited. Adding to this literature, the current results show that the effects of trust on subsequent attitudes are particularly strong under conditions of uncertainty. Thus, uncertainty was identified as an important moderator of the relationship between trust and related outcome variables. This finding

empirically supports the notion that trust matters most when individuals feel uncertain (e.g., Kramer, 2001; McEvily et al., 2003; Thomson, 1967).

The current results are consistent with relational models of trust (e.g., Lewicki et al., 2006; McAllister, 1995; Tyler & Lind, 1992). Relational models propose that a party's trustworthiness is important to individuals because it conveys a sense of belongingness and security. When a party is perceived as trustworthy, one can infer that this party has positive intentions towards oneself, that one will be respected and valued by the person or group, or that one will be integrated into the group, which can create or restore self-identity. At the same time, when a party is perceived as untrustworthy one can conclude that this party might have negative intentions and possibly lacks respect and valuation for others. This may prevent a person from engaging in a relationship that is potentially harmful in terms of self-identity. As outlined earlier, these characteristics of trust can contribute to decreasing personal uncertainty (see Chapter 2.4). From this it follows that trust-related issues should become particular relevant under conditions of personal uncertainty. This is what was found in the current studies: individuals who experienced high levels of personal uncertainty were most sensitive to trust-related information.

From an applied perspective, the present findings suggest that building trust becomes particularly important in times of uncertainty, such as during organizational changes. Distrust can have unfavorable consequences for organizations in any case (e.g., intentions to quit; see Dirks & Ferrin, 2002), but the potential negative effects of distrust are likely to be even stronger when individuals feel uncertain. At the same time, the positive effects of trust are likely to be more pronounced.

Third, the current research has implications for the *fairness literature*. In recent years, the interest in moderators of the effect of procedural fairness on subsequent reactions has increased and several studies have established uncertainty as a moderating variable of this effect (see Chapter 2.6 for details). However, the current

findings indicate that the interaction between procedural fairness and uncertainty may be significantly reduced or—as is the case in the present data—may even become non-significant in the presence of trust information. Future studies on the interplay between uncertainty and fairness should consider the potential impact of trust on this relationship. Investigating one construct (e.g., procedural fairness) without paying attention to the other one (e.g., trust) sometimes only tells one part of the story, such as regarding the question of how individuals cope with uncertainty.

The uncertainty management model (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002) is based on the premise that fairness provides a way to deal with uncertainty. Based on this premise, a core element of the model constitutes the proposition that uncertainty sensitizes individuals to fairness information (see Chapter 2.6). While several studies provide evidence for this latter assumption (see Van den Bos, 2009 for an overview), a basic premise of the model—that fairness helps cope with uncertainty—still requires empirical validation. Suggestive support for this premise may be provided by the current data. It was shown that personal uncertainty can be reduced by means of trust-related information. Considering that fairness information can substitute lacking trust information (e.g., Van den Bos et al., 1998), it may be speculated that fairness indeed helps diminish uncertainty when trust informtion is not at hand. This inference does, however, not replace empirical tests of the model's premise. Also, whether fairness information contributes to uncertainty reduction when information about a party's trustworthiness is available is an unresolved issue which future research may answer.

4.3 Open questions and future research perspectives

The research presented here gave answers to some important questions, but naturally left others unanswered and created new ones. I will address some of these questions below and propose possibilities how future studies may approach them.

4.3.1 Does distrust always reduce uncertainty?

The present findings show that uncertainty can be diminished not only by trust, but also by distrust. However, it can be assumed that the potential of distrust to reduce uncertainty is not universal but depends on several personal and situational factors.

When the relationship in question is not critical for assuring a sense of inclusiveness and self-identity, the information that the other party is distrustful may be very useful for deciding not to relate to the other person or group and may thereby contribute to uncertainty reduction. Similarly, when alternative opportunities to interact with others are available, or when one can freely choose whether or not to relate to another party, the knowledge that a party is not trustworthy signals that interaction is not reasonable and prevents individuals form potential negative identity-related consequences and thereby reduces uncertainty. In such cases, it is likely that distrust diminishes the complexity of the social world, makes relationships more predictable, prevents individuals from undesirable interactions, and thereby renders uncertainty manageable (see Lewicki et al., 1998; Lewis & Weigert, 1985; Luhmann, 1968).

However, when the relationship in question is highly important for an individual, when no alternative relationships are available, or when withdrawing from a relationship is not an option, the information that the person or group in question cannot be trusted may have detrimental consequences for the individual. S/he has to continue interacting with the other party while knowing that the party is not trustworthy. This may pose a threat to self-identity and undermine feelings of belongingness and security (e.g.,

Kramer, 2001; Lind & Tyler, 1988; McAllister, 1995; Tyler & Kramer, 1996; Tyler & Lind, 1992). It is likely that uncertainty about the self and one's relationship with others is then not reduced, but rather amplified.

An interesting project for future research would be to investigate variables that moderate the reduction of uncertainty by means of distrust, such as personal relevance of the relationship, availability of alternative relationships, and free choice of interaction. As noted, I assume that distrust most likely reduces uncertainty when personal relevance is low, when there are alternative relationships available, or when a person can freely choose whether or not to engage in a relationship. Such research will generate a better understanding of conditions under which distrust reduces uncertainty.

4.3.2 Does uncertainty always sensitize individuals to trust?

The hypothesis that uncertainty increases sensitivity to trust-related information rests on the presumption that individuals want to manage their personal uncertainty. Although this premise mostly seems to be met since feeling uncertain is normally highly aversive and threatening (Hogg, 2007; Van den Bos, 2009), there may be conditions when individuals are not so strongly motivated to deal with their personal uncertainty. Two possible variables will be considered here, namely tolerance of ambiguity and uncertainty orientation, and it will be discussed how they may influence the sensitizing effect of uncertainty to trust.

Tolerance of ambiguity. There may be individual differences in how bearable people find it to experience personal uncertainty. When two individuals feel uncertain to the same degree and both experience this as an aversive or threatening state, one of them may find this to be more endurable than the other. An interesting variable in this context is *tolerance of ambiguity*, which captures the way individuals "perceive and process information about ambiguous situations or stimuli when confronted by an array

of unfamiliar, complex, or incongruent clues" (Furnham & Ribchester, 1995). Individuals with low tolerance of ambiguity experience uncertainty and ambiguity as highly stressful and aversive, whereas individuals with high tolerance of ambiguity find this challenging and desirable. It can be speculated that when uncertainty is experienced as highly unbearable (i.e., when tolerance of ambiguity is low), individuals are more motivated to decrease their uncertainty and hence are more attentive to those types of information that contribute to uncertainty reduction, such as trust-related information. However, when uncertainty is experienced as more bearable (i.e., when tolerance of ambiguity is high), individuals should be less motivated to immediately diminish their uncertainty and hence should be less responsive to those types of information that contribute to uncertainty reduction. That said, it can be hypothesized that the sensitizing effect of uncertainty is particularly strong when tolerance of ambiguity is low, but is weaker when tolerance of ambiguity is high.

Uncertainty orientation. Individuals have different strategies of coping with uncertainty. Sorrentino and colleagues (e.g., Sorrentino & Roney, 1986, 2000; Sorrentino, Short, & Raynor, 1984) propose that individuals differ in how they approach ambiguity and uncertainty, and label this variable *uncertainty orientation*. When facing situations that involve uncertainty about the self and the social environment, *uncertainty-oriented* persons approach these situations, show explorative behavior, and are motivated to integrate and learn from new or inconsistent information. In contrast, *certainty-oriented* persons try to avoid such situations. They feel more comfortable when the level of uncertainty about the self and the social environment is low and when the available information is familiar and consistent. While uncertainty-oriented persons tend to directly confront uncertainty and try to actively resolve it, certainty-oriented persons prefer to maintain the clarity and certainty that is associated with their existing

cognitions, for example by ignoring or avoiding ambiguity or inconsistency (see also Szeto & Sorrentino, 2010).

Different predictions for certainty- and uncertainty-oriented individuals are conceivable. On the one hand, it is possible that uncertainty-oriented individuals more actively seek out and thus more strongly react to information that contributes to reducing their uncertainty, such as a party's trustworthiness. In contrast, certainty-oriented individuals may be less likely to actively seek out such information because it might reveal that the other party is not trustworthy, which would make them feel even more uncertain. They would possibly chose ignorance over information that is potentially unsettling and would therefore not be very attentive or responsive to such kind of information. Hence, it could be predicted that uncertainty-oriented individuals compared to certainty-oriented individuals are *more* sensitive to trust-related information when they feel uncertain.

On the other hand, it is also conceivable that uncertainty-oriented individuals find it more acceptable to experience personal uncertainty and are not so strongly motivated to immediately reduce their uncertainty because they want to learn from inconsistencies and integrate it into their knowledge structures. In contrast, certainty-oriented individuals want the level of experienced uncertainty to be as low as possible and are therefore presumably more motivated to immediately reduce their uncertainty. Hence, it could also be predicted that when feeling uncertain, uncertainty-oriented compared to certainty-oriented individuals do not so urgently need to diminish their personal uncertainty and are thus *less* sensitive to information that contributes to uncertainty reduction, such as trust information.

Future research projects may test the outlined propositions. Thereby, potential moderators of the sensitizing effect of uncertainty to trust which was demonstrated in the present studies could be identified.

4.3.3 Which elements of trust are responsible for the findings?

A party's trustworthiness can be conceived of as consisting of several components. According to Mayer and colleagues (1995), these are ability, benevolence, and integrity (see Chapter 2.3.3). In the current dissertation, the focus was on individuals' general trust perceptions, rather than the single components of a party's trustworthiness (such as benevolence, integrity, and ability; see Mayer et al., 1995). An interesting venue for future research would be to identify which component(s) of trust individuals find particularly valuable for uncertainty management and which are therefore attended to most strongly under conditions of personal uncertainty. Arguably, this applies to those components which are most revealing about the quality of the relationship with the other party.

Benevolence most likely falls into this category. When a trustee has unselfish positive intentions towards the trustor (which is the core of benevolence) this indicates that the relationship between the two parties is positive and that the trustor can expect to be respected, accepted, and not be exploited. In this sense, benevolence can be considered as a reliable indicator of relationship quality. *Integrity*, which captures the extent to which a trustee complies with specific norms or rules accepted and valued by the trustor, is also indicative of the quality of a social relationship. For example, a person may find it important that s/he is treated in the same way as everyone else during a selection procedure (the consistency rule, which is a part of procedural fairness; see Leventhal, 1980). If the selecting party (the trustor) treats everybody in the same manner and thus complies with an important fairness rule, the person (the trustee) may infer that the trustor has high integrity. The trustee may attribute this to the trustor's general positive conduct and conclude that the relationship with the trustor is of good quality. Hence, integrity would indicate good relationship quality. However, the rules someone

complies with might also have been dictated from a higher authority, for example a law that requires every applicant being treated equally. Complying with specific rules or social norms would then not tell much about the relationship with the trustee. Hence, integrity is not always a very direct or non-ambiguous indicator of relationship quality. *Ability* is probably the trust component which is least revealing about the quality of a social relationship. An individual can be highly capable of doing something, but this does not necessarily entail that s/he has good intentions towards others. For example, a person may be an expert in interpersonal communication, but s/he may use this skill either in favour of or against another person. Thus, from an individual's ability it is difficult to directly infer good or poor relationship quality.

From these considerations I deduce that benevolence has the highest potential to diminish personal uncertainty, closely followed by integrity, while ability presumably contributes less to uncertainty reduction. Hence, I predict that when individuals feel uncertain about themselves or their relationships with others, they are especially sensitive to a party's benevolence and (to a slightly lesser degree) to a party's integrity, while individuals' sensitivity to a party's ability is least pronounced.

These predictions cannot be tested by means of the present data, either because the measures of trust used here did not capture the three dimensions separately, or because trust was manipulated in such a way that information on all three trust dimensions was simultaneously presented to participants. To test the outlined presumptions, one could first prime participants with certainty versus uncertainty (see for example Study 3). Participants would then be assigned to three groups and given information either about a party's benevolence, ability, or integrity (this could be done in a similar way as the trust manipulation in Study 1 or in Studies 5, 6, and 9, but in this case only information about one of the three trust dimensions would be presented). One

could then analyze which aspect of trustworthiness has the highest potential to reduce personal uncertainty and to which component participants respond most strongly.

4.3.4 What about informational uncertainty?

The hypotheses in the current dissertation project pertain to personal uncertainty, that is, uncertainty about the self and one's relationships with others. I suppose that the reported effects are not necessarily restricted to this type of uncertainty, but may in principle also apply to informational uncertainty, too. Whether trust-related information can decrease informational uncertainty, and whether informational uncertainty sensitizes individuals to trust-related issues presumably depends on whether the trust information can contribute to reducing the informational uncertainty. For example, when a person lacks knowledge about the loyalty of another person and therefore feels uncertain, information about the other person's trustworthiness is well suited to reduce the experienced uncertainty and the person will probably be especially attentive to this kind of information. However, when a person has insufficient knowledge about the probability of a specific event—for example, whether the favourite football team will win the world cup—and therefore feels uncertain, information about the team's trustworthiness will presumably not be very useful to reduce the uncertainty and the person will probably not be particularly attentive to this information.

I further assume that informational uncertainty may sensitize individuals to trust-related issues (in case the information can help reduce informational uncertainty; see above), but that this sensitizing effect is not specific to relational information, as was the case for personal uncertainty in the present studies. Rather, I suppose that informational uncertainty increases sensitivity to all types of information that may diminish the informational uncertainty, be they relational or not. Returning to the above example, I

would presume that when individuals cannot predict the result of a football match and thus feel uncertain, they will be particularly attentive to information about previous defeats and victories (which is not a relational type of information) since this knowledge likely reduces their uncertainty. These considerations require empirical testing before conclusions about informational uncertainty can be drawn.

4.3.5 Generalization to other contexts

The present studies were largely conducted in an organizational context. Strictly speaking, inferences can therefore only be drawn with respect to organizational trust. However, the theoretical considerations and derived hypotheses are not restricted to the organizational context but in principle also apply to other contexts, such as interpersonal relations. For example, I expect that personal uncertainty can also be diminished by and increases sensitivity to interpersonal trust (cf. Boon & Holmes, 1991; Holmes & Rempel, 1989; Sorrentino et al., 1995). These predictions need to be investigated in future studies so as to show that the effects demonstrated here are not context specific but can be generalized to other areas as well.

4.3.6 The time dimension

The present studies were cross-sectional in nature and it is therefore unclear how the reported effects develop over time. With respect to uncertainty reduction, it would be interesting to examine whether trust-related information permanently (or at least for a long time) decreases uncertainty in the specific relationship or situation, or whether this effect is only of short duration and vanishes when trust information is no longer available or outdated. Concerning the effects of perceived trustworthiness on subsequent outcomes, it is not clear whether these effects increase, decrease, or remain the same. Research in the justice domain suggests that the effect of procedural fairness on subsequent outcomes by and by decreases (e.g., Ambrose & Cropanzano, 2003;

Bauer, Maertz, Dolen, & Campion, 1998). The same may be true for the effect of trust on subsequent outcomes, such that the impact of trust is reduced over time. On the other hand, trust is often weak at the beginning but becomes stronger during the course of a relationship (Mayer et al., 1995). It is therefore also possible that the impact of trust on outcomes does not decrease over time, but rather increases. Also, considering that trust judgments often represent very global evaluations of a relationship, it is possible that they are better stored in memory than for example the specific details of a procedure and might therefore have longer-term effects on outcome variables. Future studies may explore these possibilities.

4.3.7 Uncertainty, trust, and procedural fairness: How can the present findings be reconciled with previous research?

In the current studies uncertainty did not increase individuals' sensitivity to procedural fairness. This finding differs from previous research in the framework of the uncertainty management model (Van den Bos & Lind, 2002, 2010), showing that uncertainty sensitizes individuals to procedural fairness. How can these seemingly inconsistent findings be reconciled? Several considerations seem noteworthy in this respect. First, according to fairness heuristic theory (Lind, 2001) and the uncertainty management model (Van den Bos & Lind, 2002), procedural fairness impressions are used as substitutes to manage uncertainty when trust information is missing. This implies that when trust information is available, the importance of procedural fairness for uncertainty management should decrease, and uncertain individuals should become more responsive to trust than to procedural fairness. An important difference between earlier studies and the current research is that most studies in the framework of the uncertainty management model did not consider the role of trust (e.g., Diekmann et al., 2004; Elovainio et al., 2005; Kausto et al., 2005; Müller et al., 2008; Tangirala & Alge,

2006; Thau et al., 2009; Van den Bos, 2001a; Van den Bos et al., 2005). It is possible that the formerly reported interaction effects between uncertainty and procedural fairness would not have been found as consistently if trust had been included in those studies.

Second, I do not mean to propose that trust-related information is necessarily always better than fairness information for coping with uncertainty. The current results demonstrate that trust—an important type of relational information—plays a central role in terms of uncertainty management. However, information about another party's trustworthiness is sometimes not available. For example, factors like benevolence, integrity, or ability—which are important determinants of a party's trustworthiness (Mayer et al., 1995)—are not always observable, particularly at the outset of a relationship. It is therefore sometimes not possible to form a trust judgment (Colquitt, Scott, Judge, & Shaw, 2006; Mayer et al., 1995). In such a situation, procedural fairness judgments—which are at times more easily available than trust judgments—can serve as important information about social relationships and can substitute for lacking information about a party's trustworthiness. In situations where individuals do not know whether or not they should trust, fairness-related information may therefore serve as a better method of uncertainty management than trust-related information (see for example Van den Bos et al., 1998).

In a similar vein, there may be situations in which trust- and fairness-related information are in principle both available, but where trust judgments are more difficult to form than fairness judgments. For example, it may occur that information about the details of a procedure are clearly evident and readily available, while information about the other party's benevolence, integrity, or ability first has to be accquired and evaluated with considerable time and effort. According to the sufficiency principle (e.g., Chaiken et al., 1989), individuals strive to satisfy their motivational needs while minimizing cognitive effort. Thus, when two types of judgments (e.g., trust and procedural fairness) both have

the capacity to fulfill the goal of managing uncertainty but the formation of one judgment (e.g., trust) is more effortful than the formation of another judgment (e.g., procedural fairness), individuals may resort to the judgment which can be formed with less cognitive effort. Hence, there may be situations in which both types of information are available, but where individuals draw on procedural fairness rather than trust information to deal with their uncertainty. This could be the case when processing capacity is limited and individuals can exert only minimal cognitive effort (cf. Chen & Chaiken, 1999).

Finally, the fundamental idea underlying both the uncertainty management model (e.g., Van den Bos & Lind, 2002) and the current research is that *relational information* is central for uncertainty management, so that uncertainty should increase individuals' sensitivity to this type of information. Whether this is information about a party's trustworthiness, fairness, or still other types of relational information may depend on the specific situation and the specific types of information available in the situation. As such, the present findings are not so contradictory to previous research after all, and I suggest that both can be integrated into a general framework of managing uncertainty via relational information. This will be elaborated in the next chapter.

4.4 An integration: The uncertainty catalyst framework

In the following, I attempt to integrate the results from this dissertation with existing uncertainty models into a general framework from which new predictions can be derived and which may stimulate future research. For the time being, I label this the *uncertainty catalyst framework*. Other uncertainty accounts provide an important theoretical context for the framework, in particular uncertainty identity theory (Hogg, 2000, 2007), the uncertainty management model (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002), and the causal uncertainty model (Weary & Edwards, 1994, 1996), which have been addressed in Chapter 2 of this dissertation.

The current dissertation project dealt with the question how individuals cope with personal uncertainty and offered as one possible answer that information about a party's trustworthiness is useful to accomplish this goal. As noted previously, however, trust-related information is not the only type of information that can help individuals cope with their uncertainty. On a more general level, I have proposed that *relational information* (i.e., information about the quality of relationships one encounters in the social world, including for example trust-related information) is important for uncertainty management. This is a central assumption of the uncertainty catalyst model, which is outlined below.

The framework is based upon the premise that personal uncertainty is highly uncomfortable and often threatening and that individuals are thus motivated to reduce uncertainty about themselves and their social environment (e.g., Festinger, 1954; Kagan, 1972; Sorrentino et al., 1995; Van den Bos, 2009). Identifying with or integrating into relevant social groups (or representatives of these groups) constitutes an important way of dealing with uncertainty, as it creates social identity and a sense of belongingness (e.g., Hogg, 2000, 2007). Since social integration not only offers the chance of creating social identity and reducing uncertainty, but also entails the potential risk of being excluded and exploited, people need to assess whether the relationship with the group or person is positive (e.g., Lind, 2001; Yamagishi et al., 1998). Hence, they have to acquire relational information. This information can then be used to decide whether engaging in a relationship is reasonable and can lead to uncertainty reduction. Relational information should therefore be especially important to individuals under conditions of personal uncertainty. As a consequence, *personal uncertainty should act as a catalyst for relational information*. Specifically, under conditions of personal uncertainty individuals should search for relational information more actively, process relational information more effortfully, and be more sensitive to relational information. Note that these predictions are specific to relational information, rather than generally

applying to all kinds of information. An overview of the uncertainty catalyst framework is presented in Figure 15.

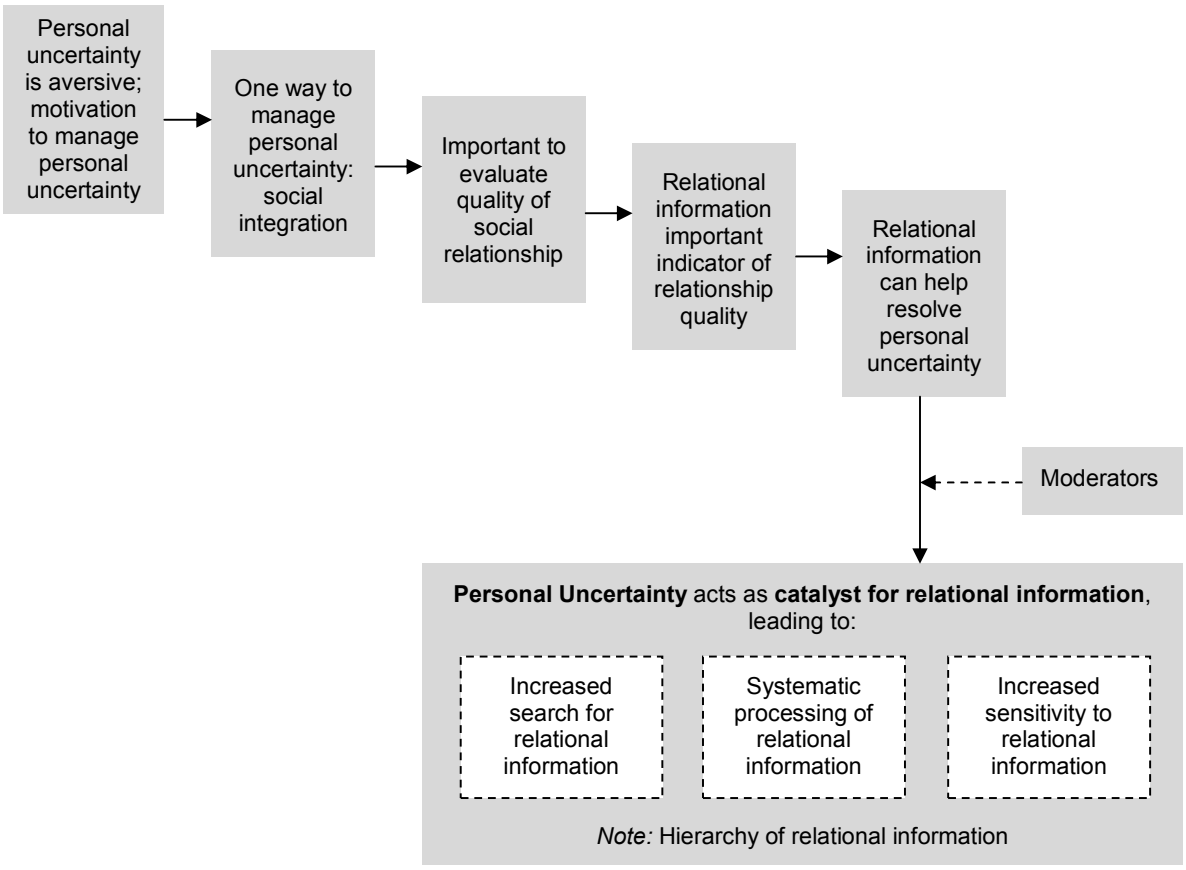

Figure 15. Illustration of the *uncertainty catalyst framework*.

4.4.1 Moderators

It is conceivable that several factors determine whether and how strongly personal uncertainty acts as a catalyst and influences the search for, processing of, and sensitivity to relational information. Potential moderating variables may be identified by having a closer look at some of the constituent parts of the framework.

Motivation to manage personal uncertainty. Individuals presumably differ in their motivation to manage personal uncertainty. As noted earlier (Chapter 4.3.2), two

interesing variables in this regard are tolerance of ambiguity (e.g., Furnham & Ribchester, 1995) and uncertainty orientation (e.g., Sorrentino & Roney, 2000). It is conceivable that these and other individual difference variables influence to what extent personal uncertainty increases the search for, processing of, and sensitivity to relational information. To given an example, when individuals are highly motivated to cope with uncertainty (e.g., when tolerance of ambiguity is low), I expect that the search for, processing of, and sensitivity to relational information is much more pronounced under conditions of personal uncertainty compared to certainty. Hence, when individuals are highly motivated to manage uncertainty, personal uncertainty should act as a strong catalyst for relational information. By contrast, when individuals are less motivated to deal with uncertainty (e.g., when tolerance of ambiguity is high), I expect that the search for, processing of, and sensitivity to relational information is still more pronounced under conditions of uncertainty compared to certainty, but not as much as when the motivation to manage uncertainty is very high. Hence, when individuals are not so strongly motivated to cope with uncertainty, personal uncertainty should act as a weaker catalyst for relational information.

Evaluating the quality of social relationships. I have argued so far that individuals are motivated to evaluate relevant social relationships in order to find out whether cooperating with or integrating into a group is advisable. However, individuals are usually not driven by one single motive alone. Multiple motives can have an impact on how individuals process information and form judgments, and different motives can be predominant in different situations (e.g., Kunda, 1990). Chen, Shechter, and Chaiken (1996) differentiate between three types of motivation. Accuracy motivation refers to the desire to form objectively valid judgments; defense motivation captures the desire to hold

attitudes that are consistent with existing beliefs; and impression motivation is the desire to form attitudes that satisfy social goals.[26]

Transferring this motivated cognition approach to the current research leads to the following considerations. First, when individuals are *accuracy-motivated* they want to evaluate the quality of a social relationship as accurately as possible in order to attain valid relational information and thereby decrease their uncertainty. Personal uncertainty would then lead to an increased search for, processing of, and sensitivity to relational information.

Second, individuals may be *defense-motivated*, preferring to adhere to their existing convictions about a social relationship rather than accurately assessing the relationship quality. On the one hand, individuals may want to uphold a positive view of the social relationship and want avoid potential negative outomes of the evaluation process (such as learning that the relationship is of poor quality). This may be the case when the relationship is highly important for a person, when no alternative relationships are available, or when a person is forced to engage in a social relationship without having the choice of withdrawing from it (see also Chapter 4.3.1). On the other hand, individuals may want to uphold a negative view of the social relationship. This may be the case when there is no possibility of being integrated into a group. A negative attitude towards the group can help accept the exclusion and protect the person from negative identity-related consequences. Under such circumstances it is possible that individuals are not motivated to evaluate the quality of a social relationship in greater detail when

[26] Chen and colleagues (1996) demonstrated in two experiments that impression-motivated participants more likely expressed attitudes that were consistent with the opinion of an interaction partner, while accuracy-motivated participants more likely expressed attitudes that were unbiased by the partner's opinion.

feeling uncertain. I assume that personal uncertainty then does not intensify the search for, processing of, or sensitivity to relational information.

Third, individuals may be *impression-motivated*, having the desire to hold attitudes that satisfy a social goal rather than objectively assessing the quality of a social relationship. For instance, a person who wants to be integrated into a social group at all costs may form and communicate very positive evaluations of this group instead of paying attention to relational cues that could potentially prove the opposite. Since individuals are not very motivated to evaluate the relationship quality, I assume that the search for, processing of, and sensitivity to relational information is not increased under conditions of personal uncertainty.

Relational information as an indicator of relationship quality. The notion that relational information indicates the quality of a social relationship and thereby helps diminish personal uncertainty presupposes that this information is perceived as diagnostic of relationship quality. This means that a person has to think that the respective type of information is in fact revealing about the relationship in question. However, this is not necesserily always the case. For example, another party may comply with important fairness rules, such as implementing an unbiased selection procedure, but these rules may have been dictated from a higher authority and thus are not telling about the party's general conduct. If relational information is considered as non-diagnostic of relationship quality it is presumably not considered as very useful for coping with uncertainty. As a result, the relational information is unlikely to receive increased attention under conditions of uncertainty. Hence, personal uncertainty presumably does not intensify the search for, processing of, or sensitivity to relational information when this information is not perceived as diagnostic for the quality of a social relationship.

In sum, I have proposed that several variables determine to what extent personal uncertainty acts as a catalyst for relational information. These variables include individual difference variables (e.g, tolerance of ambiguity, uncertainty orientation), different kinds of motivations (e.g., accuracy, defense, and impression motivation), and the diagnosticity of relational information. Considering these moderating variables may prove fruitful in stimulating future research within the uncertainty catalyst framework.

4.4.2 Hierarchy of relational information

There are many different kinds of information that tell us something about the quality of a social relationship. However, not every type of relational information is equally revealing about relationship quality and, hence, not equally effective for dealing with uncertainty. Presumably, there are some types of relational information which only convey limited information about the respective social relationship, while others give a detailed and comprehensive picture about the relationship quality. Thus, different types of relational information can be arranged in a hierarchy of relational content. I propose that when several kinds of information are available, individuals who feel uncertain preferably resort to those types or information which are most revealing about the relationship because these are most helpful for dealing with uncertainty.

To give an example for such a hierarchy of relational information, imagine that a person (e.g., Laura) is being told about her future boss that s/he treats everyone in the same manner and that s/he grants people voice in internal decision processes (both of which are elements of procedural fairness; see Lind & Tyler, 1988). Laura might assume that equal treatment is a requirement from a higher authority and is thus not very telling about the boss's fairness, while the granting of voice reflects that the boss values group members and their opinions, which thus reveals more about the boss's true conduct. Hence, in comparison to the information about equal treatment, Laura might interpret the

information about receiving voice as more telling about the boss's relationship with his/her employees. According to a hierarchy of relational information, Laura would resort to this type of information more in order to cope with uncertainty, because it (supposedly) comprises more relational content. A similar point can be made with respect to trust and procedural fairness information in the present dissertation, where trust was presumably higher in the hierarchy of relational information and was therefore used with a higher priority than procedural fairness.

Note that the hierarchy of relational information does not necessarily have to be objective, but can also be based on individuals' subjective impressions regarding the relational content of information. Furthermore, whether a specific kind of information is high or low in this hierarchy can vary depending on the situation. Taking up the above example, being treated like everyone else may signal, for example, that one is a respected group member and will be treated accordingly in the future. However, when equal treatment has been dictated from an external authority, it does not tell very much about the other's intentions or future behavior. This means that a specific type of information may sometimes be highly informative with respect to relationship quality, while in other situations it may be far less revealing.

4.4.3 Evidence

Several empirical findings can be integrated into the outlined framework. The following is not to provide a comprehensive review of this research, but rather to give some examples of studies that are supportive of the uncertainty catalyst framework. First, the present data show that information about the quality of a relationship (here: trust-related information) indeed helps reduce uncertainty (see Chapter 3.1).

Second, several studies have demonstrated that uncertainty leads to more systematic processing, while certainty leads to more heuristic processing of relational

information (Greifeneder, Müller, Stahlberg, Van den Bos, & Bless, in press; Janssen, Müller, & Greifeneder, in press; Müller, Greifeneder, Stahlberg, van den Bos, & Bless, 2010). For example, in a study by Janssen and colleagues (in press), uncertain individuals relied more on the content of recalled fairness information (an indicator for systematic information processing), while certain individuals relied more on the ease with which the fairness information could be retrieved (an indicator for heuristic information processing).

Third, it has been shown that individuals who feel uncertain become more sensitive to a range of relational information, including trust (this dissertation) and fairness (see Van den Bos & Lind, 2010 for an overview). Reinhard, Van den Bos and Müller (2010) have recently demonstrated that individuals are better at detecting whether a person is lying or telling the truth when they feel personally uncertain. Also, Van den Bos and colleagues (2005) have shown that individuals who feel uncertain about themselves react more strongly to others' criticism and praise of personally relevant groups. Both lying versus telling the truth and criticizing versus praising can be considered as indicators of poor versus good relationship quality. Hence, uncertainty increases individuals' sensitivity to very different kinds of information about social relationships.

Fourth, the current results suggest that individuals differentiate between the informational value of different kinds of relational information. In the present data, people who felt uncertain drew on trust-related information (which is often more comprehensive than fairness information) with a higher priority that on fairness information when both types of information were available (see Chapter 3.4). Hence, if more than one type of relational information is available, individuals tend to choose that information which is more comprehensive and revealing about the relationship (i.e., which is higher in the

hierarchy of relational information) and which thus has the higher potential to diminish uncertainty.

To the best of my knowledge, there are no studies concerning the search for relational information under conditions of personal uncertainty. A suggestion for a study on this issue is the following: First, self-related uncertainty versus certainty is made salient. Participants then play a virtual strategy game with three other (fictive) players. They are informed that they will be paid contingent on their success in the game. Participants may choose three out of ten players who all have a specific personal profile. Information about their profiles is available in a mouse-lab design and can be bought (a fixed amount of money is given to participants prior to the game). Different types of information about the partner will be available: Relational information (information about their behavior in previous games, e.g., fairness, cooperativeness, trustworthiness, compliance with rules of the game, etc.) and non-relational information (e.g., education, field of study, grades, intelligence test results, experience with playing strategy games, percentage of games won, etc.). Participants have to pay for each piece of information they want to look at. It will be assessed how many pieces of relational versus non-relational information uncertain versus certain participants buy and for how long they look at the respective information. The prediction is that participants primed with uncertainty spend more money and time on relational information than participants primed with certainty. This difference will not emerge with respect to non-relational information.

4.4.4 Relation to other models

The uncertainty management model (Lind & Van den Bos, 2002; Van den Bos & Lind, 2002) started out to focus on the role of fairness in coping with uncertainty. In recent years, the scope of the model has been extended to other types of relational

information, such as deception (Reinhard et al., 2010) or criticism of one's group (Van den Bos et al., 2005; see above). In this sense, the ideas of the proposed uncertainty catalyst framework are well compatible with the uncertainty management model. Several additional assumptions are made in the uncertainty catalyst framework, in particular the necessary condition that relational information must have the potential to reduce personal uncertainty; the explicit inclusion of potential moderating variables; the notion of a hierarchy of relational information; and the proposition that uncertainty results not only in increased sensitivity to, but also in intensified search for and processing of relational information.

The uncertainty catalyst framework is also related to the causal uncertainty model (Weary & Edwards, 1994, 1996), particularly with regard to the assumed consequences of uncertainty, namely that it influences the search for, processing of, and responsiveness to relational or social information. A major difference, however, is that the causal uncertainty model is restricted to causal uncertainty (that is, uncertainty about cause-effect relations in social relationships), while the uncertainty catalyst framework is concerned with personal uncertainty, including both uncertainty about the self and uncertainty about ones social relationships with others. In this sense, the uncertainty catalyst framework captures a wider range of uncertainty than the causal uncertainty model.

4.5 Conclusion

How do individuals cope with uncertainty about themselves and their social environment? Among several thinkable answers to this question, the present dissertation was concerned with the role of relational information, that is, knowledge about the quality of social relationships. The focus was on a party's trustworthiness as a core type of relational information. The presented data supports the notion that knowing whether one

can (or cannot) trust someone decreases personal uncertainty. Consequently, the results further show that individuals who feel personally uncertain are especially sensitive to trust-related information. In contrast, uncertainty does not elicit increased sensitivity to non-relational information, indicating that individuals who feel uncertain become selectively more sensitive to information that is helpful for dealing with uncertainty. In comparison to other types of relational information (such as procedural fairness), trust-related information seems to play a central role in dealing with uncertainty since in the present data uncertain individuals were more sensitive to trust-related than fairness-related information. Studies in controlled laboratory settings and important applied contexts provide converging evidence for the reported findings, speaking to the internal validity and the practical relevance of the results. Together, the current findings highlight the importance of relational information in general and trust-related information in particular in the process of managing uncertainty.

5 REFERENCES

Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267-299). New York, NY: Academic Press.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage Publications, Inc.

Allen, J., Jimmieson, N. L., Bordia, P., & Irmer, B. E. (2007). Uncertainty during organizational change: Managing perceptions through communication. *Journal of Change Management, 7*(2), 187-210.

Ambrose, M. L., & Cropanzano, R. (2003). A longitudinal analysis of organizational fairness: An examination of reactions to tenure and promotion decisions. *Journal of Applied Psychology, 88*(2), 266-275.

Anderson, N. (2003). Applicant and recruiter reactions to new technology in selection: A critical review and agenda for future research. *International Journal of Selection and Assessment, 11*(2-3), 121-136.

Aryee, S., Budhwar, P. S., & Chen, Z. X. (2002). Trust as a mediator of the relationship between organizational justice and work outcomes: Test of a social exchange model. *Journal of Organizational Behavior, 23*(3), 267-286.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Bauer, T. N., Maertz, C. P. J., Dolen, M. R., & Campion, M. A. (1998). Longitudinal assessment of applicant reactions to employment testing and test outcome feedback. *Journal of Applied Psychology, 83*(6), 892-903.

Bauer, T. N., Truxillo, D. M., Sanchez, R. J., Craig, J. M., Ferrara, P., & Campion, M. A. (2001). Applicant reactions to selection: Development of the Selection Procedural Justice Scale (SPJS). *Personnel Psychology, 54*(2), 388-420.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497-529.

Baumeister, R. F., Shapiro, J. P., & Tice, D. M. (1985). Two kinds of identity crisis. *Journal of Personality, 53*(3), 407-424.

Becker, M. C., & Knudsen, T. (2005). The role of routines in reducing pervasive uncertainty. *Journal of Business Research, 58*(6), 746- 757.

Bell, B. S., Ryan, A. M., & Wiechmann, D. (2004). Justice expectations and applicant perceptions. *International Journal of Selection and Assessment, 12*(1-2), 24-38.

Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. *Games and Economic Behavior, 10*(1), 122-142.

Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research, 1*, 99-112.

Bies, R. J. (2001). Interactional (in)justice: The sacred and the profane. In J. Greenberg & R. Cropanzano (Eds.), *Advances in Organizational Justice* (pp. 89-118). Stanford, CA: Stanford University Press.

Bies, R. J. (2005). Are procedural justice and interactional justice conceptually distinct? In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of organizational justice* (pp. 85-112). Mahwah, NJ: Lawrence Erlbaum Associates.

Bies, R. J., & Moag, J. S. (1986). Interactional justice: Communication criteria of fairness. In R. J. Lewichi, B. H. Sheppard & M. H. Bazerman (Eds.), *Research on Negotiation in Organizations* (Vol. 1, pp. 43-55). Greenwich, CT: JAI Press.

Blader, S. L., & Tyler, T. R. (2003a). What constitutes fairness in work settings? A four-component model of procedural justice. *Human Resource Management Review, 13*(1), 107-126.

Boon, S. D., & Holmes, J. G. (1991). The dynamics of interpersonal trust: Resolving uncertainty in the face of risk. In R. A. Hinde & J. Groebel (Eds.), *Cooperation and prosocial behavior* (pp. 190-211). New York, NY: Cambridge University Press.

Brockner, J., Siegel, P. A., Daly, J. P., Tyler, T., & Martin, C. (1997). When trust matters: The moderating effect of outcome favorability. *Administrative Science Quarterly, 42*(3), 558-583.

Burke, B. L., Martens, A., & Faucher, E. H. (2010). Two decades of terror management theory: A meta-analysis of mortality salience research. *Personality and Social Psychology Review, 14*(2), 155-195.

Campbell, J. D. (1990). Self-esteem and clarity of the self-concept. *Journal of Personality and Social Psychology, 59*(3), 538-549.

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of personality and social psychology, 70*(1), 141-156.

Carroll, P. J., Arkin, R. M., & Oleson, K. C. (2010). Introduction: The uncertain self. In P. J. Carroll, R. M. Arkin & K. C. Oleson (Eds.), *Handbook of the uncertain self* (pp. 1-9). New York, NY: Psychology Press.

Case, T. I., Fitness, J., Cairns, D. R., & Stevenson, R. J. (2004). Coping with uncertainty: Superstitious strategies and secondary control. *Journal of Applied Social Psychology, 34*(4), 848-871.

Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 212-252). New York, NY: The Guilford Press.

Chapman, D. S., & Webster, J. (2003). The use of technologies in the recruiting, screening, and selection processes for job candidates. *International Journal of Selection and Assessment, 11*(2-3), 113-120.

Chen, S., & Chaiken, S. (1999). The heuristic-systematic model in its broader context. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 73-96). New York, NY: Guilford Press.

Chen, S., Shechter, D., & Chaiken, S. (1996). Getting at the truth or getting along: Accuracy- versus impression-motivated heuristic and systematic processing. *Journal of Personality and Social Psychology, 71*(2), 262-275.

Clore, G. L. (1992). Cognitive phenomenology: Feelings and the construction of judgment. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 133-163). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes, 86*(2), 278-321.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O. L. H., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology, 86*(3), 425-445.

Colquitt, J. A., Scott, B. A., Judge, T. A., & Shaw, J. C. (2006). Justice and personality: Using integrative theories to derive moderators of justice effects. *Organizational Behavior and Human Decision Processes, 100*(1), 110-127.

Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology, 92*(4), 909-927.

Colquitt, J. A., & Shaw, J. C. (2005). How should organizational justice be measured? In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of organizational justice* (pp. 113-152). Mahwah, NJ: Lawrence Erlbaum Associates.

Cook, C., Heath, F., & Thomson, R. L. (2000). A meta-analysis of response rates in web- or internet-based surveys. *Educational and psychological measurement, 60*(6), 821-836.

De Cremer, D., & Sedikides, C. (2005). Self-uncertainty and responsiveness to procedural justice. *Journal of Experimental Social Psychology, 41*(2), 157-173.

De Dreu, C. K. W., Giebels, E., & Van de Vliet, E. (1998). Social motives and trust in integrative negotiation: The disruptive effects of punitive capability. *Journal of Applied Psychology, 83*(3), 408-422.

Deutsch, M. (1975). Equity, equality, and need: What determines which value will be used as the basis of distributive justice? *Journal of Social Issues, 31*(3), 137-149.

Diekmann, K. A., Barsness, Z. I., & Sondak, H. (2004). Uncertainty, fairness perceptions, and job satisfaction: A field study. *Social Justice Research, 17*(3), 237-255.

Dillman, D. A. (2000). *Mail and internet surveys. The tailored design method* (2nd ed.). New York, NY: John Wiley & Sons, Inc.

Dineen, B. R., Noe, R. A., & Wang, C. (2004). Perceived fairness of web-based applicant screening procedures: Weighing the rules of justice and the role of individual differences. *Human Resource Management, 43*(2-3), 127-145.

Dirks, K. T. (1999). The effects of interpersonal trust on work group performance. *Journal of Applied Psychology, 84*(3), 445-455.

Dirks, K. T., & Ferrin, D. L. (2001). The role of trust in organizational settings. *Organization Science, 12*(4), 450-467.

Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology, 87*(4), 611-628.

Driscoll, J. W. (1978). Trust and participation in organizational decision making as predictors of satisfaction. *Academy of Management Journal, 21*(1), 44-56.

Dykman, B. M. (1998). Integrating cognitive and motivational factors in depression: Initial tests of a goal-orientation approach. *Journal of Personality and Social Psychology, 74*(1), 139-158.

Elovainio, M., Van den Bos, K., Linna, A., Kivimaki, M., Ala-Mursula, L., Pentti, J., et al. (2005). Combined effects of uncertainty and organizational justice on employee health: Testing the uncertainty management model of fairness judgments among Finnish public sector employees. *Social Science & Medicine, 61*(12), 2501-2512.

Felson, R. B., & Gmelch, G. (1979). Uncertainty and the use of magic. *Current Anthropology, 20*(3), 587-589.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*, 117-140.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Furnham, A., & Ribchester, T. (1995). Tolerance of ambiguity: A review of the concept, its measurement and applications. *Current Psychology, 14*(3), 179-199.

Gao, T., Sirgy, M. J., & Bird, M. M. (2005). Reducing buyer decision-making uncertainty in organizational purchasing: Can supplier trust, commitment, and dependence help? *Journal of Business Research, 58*(4), 397-405.

Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison: Development of a scale of social comparison orientation. *Journal of Personality and Social Psychology, 76*(1), 129-142.

Gilliland, S. W. (1993). The perceived fairness of selection systems: An organizational justice perspective. *Academy of Management Review, 18*(4), 694-734.

Gilliland, S. W., & Steiner, D. D. (2001). Causes and consequences of applicant perceptions of unfairness. In R. Cropanzano (Ed.), *Justice in the workplace: From theory to practice* (Vol. 2, pp. 175-195). Mahwah, NJ: Lawrence Erlbaum Associates.

Greco, V., & Roger, D. (2001). Coping with uncertainty: The construction and validation of a new measure. *Personality and Individual Differences, 31*(4), 519-534.

Greenhalgh, L., & Rosenblatt, Z. (1984). Job insecurity: Toward conceptual clarity. *The Academy of Management Review, 9*(3), 438-448.

Greifeneder, R., Müller, P. A., Stahlberg, D., Van den Bos, K., & Bless, H. (in press). Guiding trustful behavior: The role of accessible content and accessibility experiences. *Journal of Behavioral Decision Making*.

Gulati, R., & Nickerson, J. A. (2008). Interorganizational trust, governance choice, and exchange performance. *Organization Science, 19*(5), 688-708.

Hermann, A. D., Leonardelli, G. J., & Arkin, R. M. (2002). Self-doubt and self-esteem: A threat from within. *Personality and Social Psychology Bulletin, 28*(3), 395-408.

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social Psychology: Handbook of basic principles* (pp. 133-168). New York, NY: Guilford Press.

Highhouse, S., Lievens, F., & Sinar, E. F. (2003). Measuring attraction to organizations. *Educational and Psychological Measurement, 63*(6), 986-1001.

Hogg, M. A. (2000). Subjective uncertainty reduction through self-categorization: A motivational theory of social identity processes. *European Review of Social Psychology, 11*, 223–255.

Hogg, M. A. (2007). Uncertainty-identity theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 39, pp. 69-126). San Diego, CA: Elsevier Academic Press.

Hogg, M. A. (2009). Managing self-uncertainty through group identification. *Psychological Inquiry, 20*(4), 221-224.

Hogg, M. A., & Mullin, B.-A. (1999). Joining groups to reduce uncertainty: Subjective uncertainty reduction and group identification. In D. Abrams & M. A. Hogg (Eds.), *Social identity and social cognition* (pp. 249-279). Malden, MA: Blackwell Publishing.

Hogg, M. A., Sherman, D. K., Dierselhuis, J., Maitner, A. T., & Moffitt, G. (2007). Uncertainty, entitativity, and group identification. *Journal of Experimental Social Psychology, 43*(1), 135-142.

Holmes, J. G., & Rempel, J. K. (1989). Trust in close relationships. In C. Hendrick (Ed.), *Close relationships. Review of personality and social psychology* (Vol. 10, pp. 187–220). Thousand Oaks, CA: Sage.

Humphreys, P., & Berkley, D. (1985). Handling uncertainty: Levels of analysis of decision problems. In G. Wright (Ed.), *Behavioral decision making* (pp. 257-282). New York, NY: Plenum.

Janssen, J., Müller, P. A., & Greifeneder, R. (in press). Cognitive processes in procedural justice judgments. The role of ease-of-retrieval, uncertainty, and experience. *Journal of Organizational Behavior*.

Jarvenpaa, S. L., Shaw, T. R., & Staples, D. S. (2004). Toward contextualized theories of trust: The role of trust in global virtual teams. *Information Systems Research, 15*(3), 250-267.

Jost, J. T., Napier, J. L., Thorisdottir, H., Gosling, S. D., Palfai, T. P., & Ostafin, B. (2007). Are needs to manage uncertainty and threat associated with political conservatism or ideological extremity? *Personality and Social Psychology Bulletin, 33*(7), 989-1007.

Kagan, J. (1972). Motives and development. *Journal of Personality and Social Psychology, 22*(1), 51-66.

Kausto, J., Elo, A.-L., Lipponen, J., & Elovainio, M. (2005). Moderating effects of job insecurity in the relationships between procedural justice and employee well-being: Gender differences. *European Journal of Work and Organizational Psychology, 14*(4), 431-452.

Kernis, M. H., Paradise, A. W., Whitaker, D. J., Wheatman, S. R., & Goldman, B. N. (2000). Master of one's psychological domain? Not likely if one's self-esteem is unstable. *Personality and Social Psychology Bulletin, 26*(10), 1297-1305.

Knobloch, L. K., & Solomon, D. H. (1999). Measuring the sources and content of relational uncertainty. *Communication Studies, 50*, 261-278.

Knobloch, L. K., & Solomon, D. H. (2002). Information seeking beyond initial interaction: Negotiating relational uncertainty within close relationships. *Human Communication Research, 28*(2), 243-257.

Kollock, P. (2006). The emergence of exchange structures: An experimental study of uncertainty, commitment, and trust. In R. M. Kramer (Ed.), *Organizational trust: A reader* (pp. 170-203). New York, NY: Oxford University Press.

Konovsky, M. A., & Pugh, S. D. (1994). Citizenship behavior and social exchange. *Academy of Management Journal, 37*(3), 656-669.

Kramer, R. M. (2001). Identity and trust in organizations: One anatomy of a productive but problematic relationship. In M. A. Hogg & D. J. Terry (Eds.), *Social identity processes in organizational contexts* (pp. 167-179). Philadelphia, PA: Psychology Press.

Kramer, R. M., & Cook, K. S. (2004). Trust and distrust in organizations: Dilemmas and approaches. In R. M. Kramer & K. S. Cook (Eds.), *Trust and distrust in organizations: Dilemmas and approaches* (pp. 1-18). New York, NY: Russell Sage Foundation.

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin, 108*(3), 480-498.

Kurtz, J. L., Wilson, T. D., & Gilbert, D. T. (2007). Quantity versus uncertainty: When winning one prize is better than winning two. *Journal of Experimental Social Psychology, 43*(6), 979-985.

Leventhal, G. S. (1980). What should be done with equity theory? New approaches to the study of fairness in social relationships. In K. J. Gergen, M. S. Greenberg & R. H. Wills (Eds.), *Social Exchange. Advances in Theory and Research* (pp. 27-55). New York, NY: Plenum Press.

Lewicki, R. J., & Bunker, B. B. (1995). Trust in relationships: A model of development and decline. In B. B. Bunker, J. Z. Rubin & Associates (Eds.), *Conflict, cooperation and justice: Essays inspired by the work of Morton Deutsch* (pp. 133-173). San Francisco, CA: Jossey-Bass.

Lewicki, R. J., & Bunker, B. B. (1996). Developing and maintaining trust in work relationships. In R. M. Kramer & T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research* (pp. 114-139). Thousand Oaks, CA: Sage Publications.

Lewicki, R. J., McAllister, D. J., & Bies, R. J. (1998). Trust and distrust: New relationships and realities. *Academy of Management Review, 23*(3), 438-458.

Lewicki, R. J., Tomlinson, E. C., & Gillespie, N. (2006). Models of interpersonal trust development: Theoretical approaches, empirical evidence, and future directions. *Journal of Management, 32*(6), 991-1022.

Lewis, J. D., & Weigert, A. (1985). Trust as a social reality. *Social Forces, 63*(4), 967-985.

Lievens, F., & Harris, M. M. (2003). Research on internet recruiting and testing: Current status and future directions. In C. L. Cooper & I. T. Robertson (Eds.),

International Review of Industrial and Organizational Psychology (Vol. 18, pp. 131-165). New York, NY: John Wiley & Sons.

Lind, E. A. (2001). Fairness heuristic theory: Justice judgments as pivotal cognitions in organizational relations. In J. Greenberg & R. Cropanzano (Eds.), *Advances in Organizational Justice* (pp. 56-88). Stanford, CA: Stanford University Press.

Lind, E. A., & Tyler, T. R. (1988). *The social psychology of procedural justice*. New York, NY: Plenum Press.

Lind, E. A., & Van den Bos, K. (2002). When fairness works: Toward a general theory of uncertainty management. In B. M. Staw & R. M. Kramer (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (Vol. 24, pp. 181-223). Greenwich, CT: Elsevier Science/JAI Press.

Luhmann, N. (1968). *Vertrauen: Ein Mechanismus der Reduktion sozialer Komplexität*. Stuttgart, Germany: Enke [English translation: Trust and power, Chichester. UK: Wiley, 1979].

Malinowski, B. (1954). *Magic, science and religion: And other essays*. Garden City, NY: Doubleday Anchor Books.

Marcus, B., & Schuler, H. (2004). Antecedents of counterproductive behavior at work: A general perspective. *Journal of Applied Psychology, 89*(4), 647-660.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-396.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20*(3), 709-734.

McAllister, D. J. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *The Academy of Management Journal, 38*(1), 24-59.

McCaul, K. D. (1983). Observer attributions of depressed students. *Personality and Social Psychology Bulletin, 9*(1), 74-82.

McClelland, G. H., & Judd, C. M. (1993). Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin, 114*(2), 376-390.

McEvily, B., Perrone, V., & Zaheer, A. (2003). Introduction to the special issue on trust in an organizational context. *Organization Science, 14*(1), 1-4.

McGregor, I., & Marigold, D. C. (2003). Defensive zeal and the uncertain self: What makes you so sure? *Journal of Personality and Social Psychology, 85*(5), 838-852.

McGregor, I., Zanna, M. P., Holmes, J. G., & Spencer, S. J. (2001). Compensatory conviction in the face of personal uncertainty: Going to extremes and being oneself. *Journal of Personality and Social Psychology, 80*(3), 472-488.

McKnight, D. H., & Chervany, N. L. (2001). Trust and distrust definitions: One bite at a time. In R. Falcone, M. Singh & Y.-H. Tan (Eds.), *Trust in cyber-societies* (pp. 27-54). Berlin, Germany: Springer.

Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *The Academy of Management Review, 12*(1), 133-143.

More, K. V., & Tzafrir, S. S. (2009). The role of trust in core team employees: A three-nation study. *Cross Cultural Management, 16*(4), 410-433.

Müller, P. A., Greifeneder, R., Stahlberg, D., van den Bos, K., & Bless, H. (2010). Shaping cooperation behavior: The role of accessibility experiences and uncertainty. *European Journal of Social Psychology, 40*(1), 178-187.

Müller, P. A., Janssen, J., & Jarzina, D. (2008). Auswirkungen prozeduraler Fairness und dispositionaler Unsicherheit auf die Organisationsbewertung im Kontext der Personalauswahl. *Wirtschaftspsychologie, 10*(2), 14-23.

O'Driscoll, M. P., & Beehr, T. A. (1994). Supervisor behaviors, role stressors and uncertainty as predictors of personal outcomes for subordinates. *Journal of Organizational Behavior, 15*(2), 141-155.

Olejnik, S., & Algina, J. (2003). Generalized eta and omega squared statistics: Measures of effect size for some common research designs. *Psychological Methods, 8*(4), 434-447.

Oleson, K. C., & Steckler, M. T. (2010). The phenotypic expressions of self-doubt about ability in academic contexts: Strategies of self-handicapping and subjective overachievement. In R. M. Arkin, K. C. Oleson & P. J. Carroll (Eds.), *Handbook of the uncertain self* (pp. 379-398). New York, NY: Psychology Press.

Pillai, R., Schriesheim, C. A., & Williams, E. S. (1999). Fairness perceptions and trust as mediators for transformational and transactional leadership: A two-sample study. *Journal of Management, 25*(6), 897-933.

Reinhard, M.-A., Van den Bos, K., & Müller, P. A. (2010). *The uncertain self is good at detecting lies: The influence of personal uncertainty on the process of deception detection*. Manuscript under review.

Robinson, S. L. (1996). Trust and breach of the psychological contract. *Administrative Science Quarterly, 41*(4), 574-599.

Rosnow, R. L., & Rosenthal, R. (2003). Effect sizes for experimenting psychologists. *Canadian Journal of Experimental Psychology/Revue canadienne de psychologie expérimentale, 57*(3), 221-237.

Rotter, J. B. (1971). Generalized expectancies for interpersonal trust. *American Psychologist, 26*(5), 443-452.

Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review, 23*(3), 393-404.

Schoorman, F. D., Mayer, R. C., & Davis, J. H. (2007). An integrative model of organizational trust: Past, present, and future. *Academy of Management Review, 32*(2), 344-354.

Schwarz, N., & Clore, G. L. (2007). Feelings and phenomenal experiences. In E. T. Higgins & A. Kruglanski (Eds.), *Social psychology. A handbook of basic principles* (2nd ed., pp. 385-407). New York, NY: Guilford Press.

Schweiger, D. M., & DeNisi, A. S. (1991). Communication with employees following a merger: A longitudinal field experiment. *The Academy of Management Journal, 34*(1), 110-135.

Sedikides, C., De Cremer, D., Hart, C. M., & Brebels, L. (2010). Procedural fairness responses in the context of self-uncertainty. In R. M. Arkin, K. C. Oleson & P. J. Carroll (Eds.), *Handbook of the uncertain self* (pp. 142-159). New York, NY: Psychology Press.

Sedikides, C., & Strube, M. J. (1997). Self evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 209-269). San Diego, CA: Academic Press.

Shapiro, D. L., & Kirkman, B. L. (2001). Anticipatory injustice: The consequences of expecting injustice in the workplace. In J. Greenberg & R. Cropanzano (Eds.), *Advances in organization justice* (pp. 152-178). Stanford, CA: Stanford University Press.

Shapiro, D. L., Sheppard, B. H., & Cheraskin, L. (1992). Business on a handshake. *Negotiation Journal, 8*(4), 365-377.

Simpson, J. A. (2007). Foundations of interpersonal trust. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (2nd ed., pp. 587-607). New York, NY: Guilford Press.

Smith, J. B., & Barclay, D. W. (1997). The effects of organizational differences and trust on the effectiveness of selling partner relationships. *Journal of Marketing, 61*(1), 3-21.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhart (Ed.), *Sociological Methodology* (pp. 290-312). San Francisco, CA: Jossey-Bass.

Solomon, S., Greenberg, J., & Pyszczynski, T. (1991). A terror management theory of social behavior: The psychological functions of self-esteem and cultural worldviews. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 24, pp. 93-159). San Diego, CA: Academic Press.

Sora, B., Caballer, A., Peiro, J. M., & De Witte, H. (2009). Job insecurity climate's influence on employees' job attitudes: Evidence from two European countries. *European Journal of Work and Organizational Psychology, 18*(2), 125-147.

Sorrentino, R. M., Holmes, J. G., Hanna, S. E., & Sharp, A. (1995). Uncertainty orientation and trust in close relationships: Individual differences in cognitive styles. *Journal of Personality and Social Psychology, 68*(2), 314-327.

Sorrentino, R. M., & Roney, C. J. R. (1986). Uncertainty orientation, achievement-related motivation, and task diagnosticity as determinants of task performance. *Social Cognition, 4*(4), 420-436.

Sorrentino, R. M., & Roney, C. J. R. (2000). *The uncertain mind: Individual differences in facing the unknown*. Philadelphia, PA: Psychology Press.

Sorrentino, R. M., Short, J.-A. C., & Raynor, J. O. (1984). Uncertainty orientation: Implications for affective and cognitive views of achievement behavior. *Journal of Personality and Social Psychology, 46*(1), 189-206.

Stack, L. D. (1988). Trust. In H. London & J. E. Exner (Eds.), *Dimensionality of personality* (pp. 561-599). New York, NY: Wiley.

Steiner, D. D., & Gilliland, S. W. (1996). Fairness reactions to personnel selection techniques in France and the United States. *Journal of Applied Psychology, 81*(2), 134-141.

Sverke, M., Hellgren, J., & Näswall, K. (2002). No security: A meta-analysis and review of job insecurity and its consequences. *Journal of Occupational Health Psychology, 7*(3), 242-264.

Szeto, A. C. H., & Sorrentino, R. M. (2010). Uncertainty orientation: Myths, trusths, and the inferface of motivation and cognition. In R. M. Arkin, K. C. Oleson & P. J. Carroll (Eds.), *Handbook of the uncertain self* (pp. 101-121). New York, NY: Psychology Press.

Tajfel, H. (1969). Cognitive aspects of prejudice. *Journal of Social Issues, 25*(4), 79-97.

Tajfel, H. (1974). Social identity and intergroup behaviour. *Social Science Information, 13*(2), 65-93.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks/Cole.

Tangirala, S., & Alge, B. J. (2006). Reactions to unfair events in computer-mediated groups: A test of uncertainty management theory. *Organizational Behavior and Human Decision Processes, 100*(1), 1-20.

Tardy, C. H. (1988). Interpersonal evaluations: Measuring attraction and trust. In C. H. Tardy (Ed.), *A handbook of the study of human communication* (pp. 269-283). Norwook, NJ: Ablex Publishing.

Thau, S., Aquino, K., & Wittek, R. (2007). An extension of uncertainty management theory to the self: The relationship between justice, social comparison orientation, and antisocial work behaviors. *Journal of Applied Psychology, 92*(1), 250-258.

Thau, S., Bennett, R. J., Mitchell, M. S., & Marrs, M. B. (2009). How management style moderates the relationship between abusive supervision and workplace deviance: An uncertainty management theory perspective. *Organizational Behavior and Human Decision Processes, 108*(1), 79-92.

Thibaut, J., & Walker, L. (1975). *Procedural justice. A psychological analysis*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Thomson, J. D. (1967). *Organizations in action*. New York, NY: McGraw-Hill.

Tiedens, L. Z., & Linton, S. (2001). Judgment under emotional certainty and uncertainty: The effects of specific emotions on information processing. *Journal of Personality and Social Psychology, 81*(6), 973-988.

Tolman, E. C., & Brunswik, E. (1935). The organism and the causal texture of the environment. *Psychological Review, 42*(1), 43-77.

Truxillo, D. M., Steiner, D. D., & Gilliland, S. W. (2004). The importance of organizational justice in personnel selection: Defining when selection fairness really matters. *International Journal of Selection and Assessment, 12*(1-2), 39-53.

Tsai, W., & Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal, 41*(4), 464-476.

Turner, J. C. (1985). Social categorization and the self-concept: A social cognitive theory of group behavior. In E. J. Lawler (Ed.), *Advances in Group Processes: Theory and Research* (Vol. 2, pp. 77-122). Greenwich, CT: JAI Press.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Blackwell.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science, 185*(4157), 1124-1131.

Tyler, T. R., & Blader, S. L. (2003). The group engagement model: Procedural justice, social identity, and cooperative behavior. *Personality and Social Psychology Review, 7*(4), 349-361.

Tyler, T. R., & Degoey, P. (1996). Trust in organizational authorities: The influence of motive attributions on willingness to accept decisions. In R. M. Kramer & T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research* (pp. 331-356). Thousand Oaks, CA: Sage Publications.

Tyler, T. R., & Kramer, R. M. (1996). Whither trust? In R. M. Kramer & T. R. Tyler (Eds.), *Trust in organizations. Frontiers of theory and research* (pp. 1-15). Thousand Oaks, CA: Sage Publications.

Tyler, T. R., & Lind, E. A. (1992). A relational model of authority in groups. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 115-191). San Diego, CA: Academic Press.

Van den Bos, K. (2001a). Uncertainty management: The influence of uncertainty salience on reactions to perceived procedural fairness. *Journal of Personality and Social Psychology, 80*(6), 931-941.

Van den Bos, K. (2001b). Fairness heuristic theory: Assessing the information to which people are reacting has a pivotal role in understanding organizational justice. In S. Gilliland, D. Steiner & D. Skarlicki (Eds.), *Theoretical and cultural perspectives on organizational justice* (pp. 63-84). Greenwich, CT: Information Age Publishers.

Van den Bos, K. (2009). Making sense of life: The existential self trying to deal with personal uncertainty. *Psychological Inquiry, 20*(4), 197-217.

Van den Bos, K., Bruins, J., Wilke, H. A. M., & Dronkert, E. (1999). Sometimes unfair procedures have nice aspects: On the psychology of the fair process effect. *Journal of Personality and Social Psychology, 77*(2), 324-336.

Van den Bos, K., Ham, J., Lind, E. A., Simonis, M., Essen, W. J. v., & Rijpkema, M. (2008). Justice and the human alarm system: The impact of exclamation points and flashing lights on the justice judgement process. *Journal of Experimental Social Psychology, 44*(2), 201-209.

Van den Bos, K., & Lind, E. A. (2002). Uncertainty management by means of fairness judgments. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 1-60). San Diego, CA: Academic Press.

Van den Bos, K., & Lind, E. A. (2010). The social psychology of fairness and the regulation of personal uncertainty. In R. M. Arkin, K. C. Oleson & P. J. Carroll (Eds.), *Handbook of the uncertain self* (pp. 122-141). New York, NY: Psychology Press.

Van den Bos, K., Poortvliet, P. M., Maas, M., Miedema, J., & Van den Ham, E.-J. (2005). An enquiry concerning the principles of cultural norms and values: The impact of uncertainty and mortality salience on reactions to violations and bolstering of cultural worldviews. *Journal of Experimental Social Psychology, 41*(2), 91-113.

Van den Bos, K., Van Ameijde, J., & Van Gorp, H. (2006). On the psychology of religion: The role of personal uncertainty in religious worldview defense. *Basic and Applied Social Psychology, 28*(4), 333-341.

Van den Bos, K., Van Schie, E. C. M., & Colenberg, S. E. (2002). Parents' reactions to child day care organizations: The influence of perceptions of procedures and the role of organizations' trustworthiness. *Social Justice Research, 15*(1), 53-62.

Van den Bos, K., Wilke, H. A. M., & Lind, E. A. (1998). When do we need procedural fairness? The role of trust in authority. *Journal of Personality and Social Psychology, 75*(6), 1449-1458.

Van Prooijen, J.-W., Van den Bos, K., & Wilke, H. A. M. (2007). Procedural justice in authority relations: The strength of outcome dependence influences people's reactions to voice. *European Journal of Social Psychology, 37*(6), 1286-1297.

Wat, D., & Shaffer, M. A. (2005). Equity and relationship quality influences on organizational citizenship behaviors: The mediating role of trust in the supervisor and empowerment. *Personnel Review, 34*(4), 406-422.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

Weary, G., & Edwards, J. A. (1994). Individual differences in causal uncertainty. *Journal of personality and social psychology, 67*(2), 308-318.

Weary, G., & Edwards, J. A. (1996). Causal uncertainty and related goal structures. In R. M. Sorrentino & E. T. Higgins (Eds.), *The handbook of motivation and cognition: The interpersonal context* (Vol. 3, pp. 148-181). New York, NY: Guilford Press.

Weary, G., & Jacobson, J. J. (1997). Causal uncertainty beliefs and diagnostic information seeking. *Journal of personality and social psychology, 73*(4), 839-848.

Weary, G., Marsh, K. L., & McCormick, L. (1994). Depression and social comparison motives. *European Journal of Social Psychology, 24*(1), 117-129.

Wiechmann, D., & Ryan, A. M. (2003). Reactions to computerized testing in selection contexts. *International Journal of Selection and Assessment, 11*(2-3), 215-229.

Williamson, O. E. (1993). Calculativeness, trust, and economic organization. *Journal of Law and Economics, 36*(1), 453-486.

Wilson, T. D., Centerbar, D. B., Kermer, D. A., & Gilbert, D. T. (2005). The pleasures of uncertainty: Prolonging positive moods in ways people do not anticipate. *Journal of Personality and Social Psychology, 88* (1), 5-21.

Yamagishi, T., Cook, K. S., & Watabe, M. (1998). Uncertainty, trust, and commitment formation in the United States and Japan. *American Journal of Sociology, 104*(1), 165-194.

Yamagishi, T., & Yamagishi, M. (1994). Trust and commitment in the United States and Japan. *Motivation and Emotion, 18*(2), 129-166.

6 APPENDIX

Appendix A

Trust manipulation in Study 1

Figure 16. Trust manipulation in Study 1.

Appendix B

Regression analysis in Study 2

Table 5. Hierarchical moderated multiple regression analysis with main and interaction effects of trust and salience of trust predicting participants' uncertainty about the company (Study 2).

	b	*t*	*p*	ΔR^2	R^2	*F*	*p*
Full model					.36	39.96	.000
Main effects							
Trust	-0.84	-8.16	.000	.36			
Salience of trust[a]	-0.63	-4.09	.000				
2-way interaction							
Trust x Salience of trust	0.03	0.16	.871	.000			

Notes. b = unstandardized regression coefficients; [a] 0 = trust not salient, 1 = trust salient

Appendix C

Instruction and explanation of the trust game in Study 3

Liebe Teilnehmerin, lieber Teilnehmer,

vielen Dank für Ihre Teilnahme an dieser Vorstudie. Bei diesem Fragebogen handelt es sich um eine einfache wirtschaftliche Entscheidungssituation, die wir zu einem späteren Zeitpunkt gerne hier an der Universität Mannheim als Experiment durchführen möchten. Im Folgenden werden wir Ihnen die Entscheidungsregeln erklären. Ihre Aufgabe ist es, sich in die Rolle des **SENDERS** hineinzuversetzen und uns Rückmeldung darüber zu geben, wie Sie sich verhalten würden, wenn Sie tatsächlich eine Entscheidung treffen müssten. **Bitte beachten Sie dabei, dass Sie hier kein Geld außer der Ihnen zugesagten Vergütung ausbezahlt bekommen. Sie sollen sich bitte lediglich vorstellen wie Sie sich verhalten würden, wenn Sie in dieser Situation wären.**

Sender/Empfänger Experiment

Bitte stellen Sie sich vor, dass Sie vor Beginn des Experiments anonym und per Zufall mit einer anderen Versuchsperson gepaart werden. Sie übernehmen dabei die Rolle des **SENDERS**. Die andere Person übernimmt die Rolle des Empfängers. Zu Beginn des Experiments werden **dem Sender (also Ihnen)** von uns **10,- Euro** auf ein virtuelles Bankkonto überwiesen. Dieses Geld gehört ab dann Ihnen! Als Sender haben Sie die Wahl, den kompletten Betrag für sich zu behalten, oder aber einen gewissen Anteil an den Empfänger zu senden. Jeder Euro, der versendet wird, wird von uns **vervierfacht** und auf das virtuelle Konto des Empfängers überwiesen. Nach der Entscheidung des Senders und der eventuellen Überweisung und Vervierfachung des Geldes hat der Empfänger die Wahl zu entscheiden, ob er einen Teil des Geldes auf seinem virtuellen Bankkonto wieder an Sie zurückschicken möchte. Nach der Entscheidung des Empfängers endet das Experiment; die sich ergebenden Endbeträge werden anonym und in bar an Sie und die andere Person ausgezahlt.

Ein Beispiel: Wenn Sie sich entscheiden, 5,- Euro zu senden, bekommt der Empfänger einen Betrag von 20,- Euro auf sein Konto gutgeschrieben. Wenn der Empfänger sich entschließt, 10,- Euro an Sie zurückzuschicken, bekommen Sie am Ende des Experiments 15,- Euro ausbezahlt.

Appendix D

Regression analysis in Study 4

Table 6. Hierarchical moderated multiple regression analysis with main and interaction effects of trust and uncertainty during the selection process predicting organizational attraction (Study 4).

	b	*t*	*p*	ΔR^2	R^2	*F*	*p*
Full model					.39	24.45	.000
Main effects							
Trust	0.50	6.25	.000	.35			
Uncertainty	-0.02	-0.28	.778				
2-way interaction							
Trust x Uncertainty	0.19	3.01	.003	.05			

Notes. b = unstandardized regression coefficients

Appendix E

Regression analysis in Study 7

Table 7. Hierarchical moderated multiple regression analysis with main and interaction effects of trust, procedural fairness (PF), and social comparison orientation (SCO) predicting organizatioal attraction (Study 7).

	b	*t*	*p*	ΔR^2	R^2	*F*	*p*
Full model					.25	5.33	.000
Main effects							
Trust	.18	2.92	.004				
PF	.10	2.33	.021	.20			
SCO	-.01	-.26	.793				
2-way interactions							
Trust x PF	.04	1.03	.306				
Trust x SCO	.11	2.26	.026	.05			
PF x SCO	-.06	-1.51	.134				
3-way interaction							
Trust x PF x SCO	.00	.00	.998	.00			

Notes. *b* = unstandardized regression coefficients; PF = Procedural fairness; SCO = Social comparison orientation

Appendix F

Regression analysis in Study 8

Table 8. Hierarchical moderated multiple regression analysis with main and interaction effects of trust, procedural fairness (PF), and emotional uncertainty (EU) predicting organizatioal attraction (Study 8).

	b	*t*	*p*	ΔR^2	R^2	*F*	*p*
Full model					.28	23.49	.000
Main effects							
Trust	.32	10.08	.000	.26			
PF	.02	.85	.397				
EU	.00	.00	.997				
2-way interactions							
Trust x PF	-.01	-.37	.709	.02			
Trust x EU	.09	3.29	.001				
PF x EU	-.01	-.52	.603				
3-way interaction							
Trust x PF x EU	-.02	-1.03	.303	.00			

Notes. *b* = unstandardized regression coefficients; PF = Procedural fairness; EU = Emotional uncertainty

Appendix G

Mediation model in Study 8

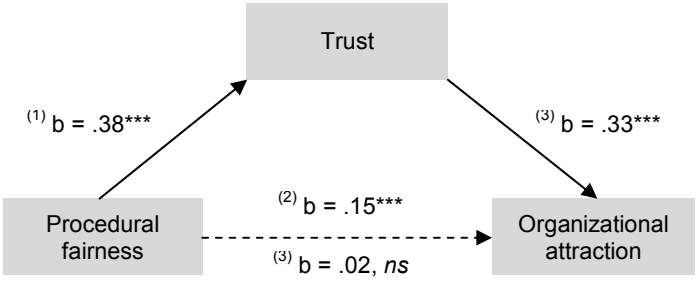

Figure 17. Trust as a mediator of the relationship between procedural fairness and organizational attraction in Study 8.

Notes. *b* = unstandardized regression coefficients; *** $p < .001$; (1) Trust was regressed on procedural fairness; (2) Organizational attraction was regressed on procedural fairness; (3) Organizational attraction was simultaneously regressed on trust and procedural fairness.

Appendix H

Mediation model in Study 9

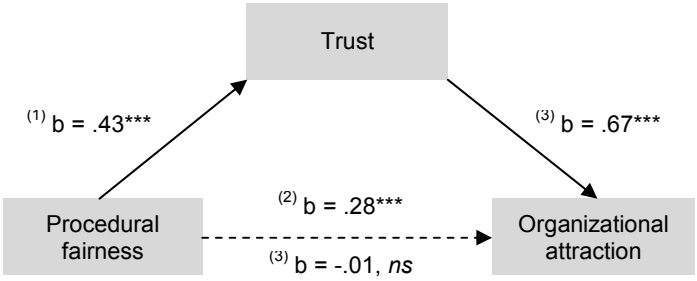

Figure 18. Trust as a mediator of the relationship between procedural fairness and organizational attraction in Study 9.

Notes. *b* = unstandardized regression coefficients; *** $p < .001$; (1) Trust was regressed on procedural fairness; (2) Organizational attraction was regressed on procedural fairness; (3) Organizational attraction was simultaneously regressed on trust and procedural fairness.

EIDESSTATTLICHE ERKLÄRUNG

Hiermit versichere ich, dass ich die vorliegende Dissertation eigenständig und ohne Benutzung anderer als der angegebenen Quellen und Hilfsmittel angefertigt habe. Wörtliche oder inhaltliche Entlehnungen aus anderen Quellen sind eindeutig als solche kenntlich gemacht und mit entsprechenden Quellenangaben versehen. Diese Arbeit hat in gleicher oder ähnlicher Form noch keiner Prüfungsbehörde vorgelegen.

Mannheim, 17. November 2010

Jana Janssen